CHM316

Question

If species A has 0.06 moles and a mass of 1.89 in a volume, what is the mol. Weight

Answer

31.5

Question

Species B with density = 0.5 and mol. Weight of 120. What is the molar concentration

Answer

0.0042

Question

Domestic examples of mass transfer are

Answer

frying of eggs

Question

These are examples of mass transfer in industrial processes

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crushing

Question

Mixing of water vapour with air during evaporation of water from a pond is mass transfer by

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Answer

phase change

Question

Mass transfer between a moving fluid and a surface is an example of which mode

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Answer

convection

Question

Dissipation of smoke from a smoke stack is an example of

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Question

Mass transfer is more rapid by

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Turbulent motion of a diffusing fluid indicates

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Question

Transport of water on a microscopic scale from high to low concentration in a system is

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molecular diffusion

Question

Rate of heat loss by a body is proportional to the difference in temperature between the body and the surrounding is _____.

Answer

Newton's

Question

The process of heat transport by a streaming fluid is _____.

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Advection

Question

Red hot iron bar transfer heat to the environment essentially through _____.

Answer

Radiation

Question

Mass transfer of heat is associated with _____.

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Question

If Q = 5 x 10-2 W; A = 10 m2; dx = 0.1 m and dt = -20°C. What is thermal conductivity, k?

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0.000025

Question

The mathematical expression of the Fourier's law is _____.

Answer

Q/dx α A.dt

Question

Conduction can be in terms of _____.

Answer

Phase

Question

Large scale industrial distillation applications include _____.

Answer

Intermittent fractional

Question

Emitted energy by matter as electromagnetic waves due to the inherent thermal energy of matters at elevated temperature is _____.

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Thermal radiation

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Heat transfer methods are employed in _____.

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Random sampling

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CHM304

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Which of the following compounds cannot be used as a mordant?

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\(PbSO_{4}\)

Question

Natural dyes generally require a mordant which is a metallic salts of the following metals except____

Answer

lead

Question

Dyes used in crop protection industry include the following except __

Answer

vat dyes

Question

The subtractive primary colours used in the printing process are ___

Answer

cyan, magenta and yellow

Question

The Polypropylene can be used as _____ and fiber

Answer

plastics

Question

Acrylics are known to have the following characteristics except ___

Answer

thy are not sensitive to heat

Question

Which of the water listed below is suitable for dyeing?

Answer

rain

Question

Natural dyes can be obtained from _____

Answer

all ot the above

Question

Most of the soft fibers come from the _____ portion of the plant

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Answer

phloem

Question

Which of the pigments listed below is an excellent engineering resins?

Answer

cadmium

Question

Which of the following dyes/pigments can be used for property identification

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Answer

luminiscent

Question

Which of the colours listed below is associated with dissolution of anger and encourages unconditional love

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Answer

pink

Question

The two methods of producing colours are

Answer

additive and subtractive colour

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Optical brighteness are used mainly for

Answer

textle fibers and paper

Question

Which of these dyes cannot be applied to cotton

Answer

disperse dye

Question

Anatto natural pigments have _____ colourant

Answer

reddish orange

Question

The red colour of tomatoe is due to the presence of _____ in it

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Answer

lycopene

Question

Opaque material has _____ reflection

Answer

very little or no

Question

Colours that are considered to have relatively higher frequencies are

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Answer

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Colour can be defined as the light of different wavelengths and _____

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CHM318

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The German Friedrich Sertüner isolated…….in 1804

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Question

The studies of alkaloids begin in the……century

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Question

Medicinal have been known since around….

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Question

Naturally occuring niitrogenous substances are known as….

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Gonane is the simple possible structure of……

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The name morphine was given by French Physicist by name

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DMAPP is an acronym for……

Answer

dimethyl allyl pyrophosphate

Question

Which is the correct acronym for IPP_____

Answer

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Testestreone is produced in the…….

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The fungus Psylocybin principally contains____

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Question

Alkaloidal salts are poorly soluble in_____

Answer

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Question

It has been reported that the root of Rauwalfia serpentina contains____

Answer

alkaloid

Question

Alkaloidal salts are soluble in_____

Answer

water

Question

Sanguinarine is an alkaloid that has_____colour

Answer

orange

Question

The alkaloid babarine is_____in colour

Answer

yellow

Question

Almost all alkaloids are soluble in_____

Answer

organic solvents

Question

Most alkaloids are poorly soluble in_____

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water

Question

Most alkaloids have_____flavour

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Question

Most alkaloids contains_____

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CHM314

Question

Which of the following constitute the permanent gases of the atmosphere?

Answer

oxygen and nitrogen

Question

The average weather condition in a region over a long period of time is kwown as _____.

Answer

climate.

Question

The layer of mixture of gases that extends up to 700 kilometres above the Earth’s surface is known as _____.

Answer

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Question

Which of the folowing is not part of the basic processes of Nitrogen Cycle?

Answer

precipitation

Question

Movement of water in its physical states through and around the planet is accomplished by the _____.

Answer

water cycle.

Question

Nitrogen is not readily available for cellular utilisation. This is because the strong triple covalent bonds between the nitrogen atoms in nitrogen molecules make it relatively _____.

Answer

inert

Question

Processses that remove carbon dioxide from the atmosphere include _____.

Answer

photosynthesis

Question

When \(CO_{2}\) dissolves in water, a hydrated \(CO_{2}\) molecule is produced which then forms an equilibrium mixture containing _____.

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In limestone, chalk and coral, carbon exist as _____.

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Question

Which of the following is not a natural biogeochemical cycles?

Answer

hydrogen cycle

Question

Which of the following is not a source of input of pollutants to the soil?

Answer

ground water

Question

The soil acts as a filter which retards the passage of chemicals to the _____.

Answer

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Question

In comparison with air and water, the soil is more variable and complex in composition and it functions as a ..... for pollutants

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Answer

sink

Question

Through which of the following ways could soil pollution become hazardous to human health _____.

Answer

food chain

Question

Which of the following does not pose a threat to the sustainability of soil resources?

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agriculture

Question

Which of the following is not an air pollutant?

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nitrogen

Question

Airborne pollutants such as pollens and spores causing allergies in sensitive persons are called _____.

Answer

aeroallergens

Question

Radiation effects on human that cause noticeable damages to the individual e.g. anemia, cataracts, skin rash and cancer, are said to be _____.

Answer

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Question

Sources of anthropogenic release of radioactive substances in aquatic environments excludes _____.

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volcanic eruptions

Question

Water used for cooling, discharge from electricity generating stations, could result in _____.

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CHM312

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The drug sulfisoxazole is active against _____

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The antibacteria that eliminates bacteria that cause urinary tract infection is ____

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Question

Intravenous preparations of antibiotics are more expensive because production process ____

Answer

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Question

Wines are prepared by the fermentation of _____

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Question

The process called Klning in brewing ____

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Question

In brew industry, the yeast converts sugar into _____

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alcohol

Question

The first step in brewing is known as ___

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Question

Which of these is not a feeling factor?

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The purpose of the mixture of ethene and hydrogen in the production of HDPE is to ____

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In industrial production of penicillin, the following phases are involved except ____

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Penicillin is a _____ metabolite

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CHM306

Question

The shorter the wavelength of the x-ray, the _____ the energy and its penetration power.

Answer

greater

Question

The interaction between x-ray radiation with matter is termed _____.

Answer

X-ray spectroscopy

Question

The major types of interferences encountered in atomic absorption analysis includes the following _____except.

Answer

Magnetic

Question

Flame emission is mainly restricted to the analysis of _____metals.

Answer

alkali

Question

Flame absorption techniques involves the measurement of the _____ radiation by free atomic species.

Answer

absorbed

Question

_____ is that concentration of an element in aqueous solution which absorbs 1% of the incident radiation passing through a cloud of atoms being determined.

Answer

Sensitivity

Question

Which of these is not determined using Flame Emission/Absorption Spectroscopy?

Answer

Carbon

Question

Any effect that changes the signal when analyte concentration remains unchanged is termed?

Answer

Interferance

Question

One of the following is not used in Flame Atomic Absorption Spectroscopy?

Answer

Slit

Question

_____ is a technique in which the emission of light by thermally excited atoms in a flame or furnace is used to measure the concentration of atoms.

Answer

Flame Emission Spectroscopy

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The absorption of IR radiation causes the _____ within a molecule to either stretch or bend.

Answer

bond

Question

When organic compounds absorb radiation in the IR region they convert it into _____ energy.

Answer

vibrational

Question

In infrared analysis, good information on the structure of the molecules is obtained from _____ Bands

---

Answer

Absorption

Question

A _____ filament lamp is the most satisfactory source of visible and near infrared radiation.

Answer

Tungsten

Question

_____is a device which identifies and translates the transmitted radiation from the sample into an electrical signal that activates a meter or recorder.

Answer

Detector

Question

A colorimeter consists of all of the following except?

Answer

pH meter

Question

As the absorbance of a solution increases, the _____ decreases.

Answer

Transmittance

Question

The statement, that the absorption of light is directly proportional to the number of the absorbing molecules is referred to as _____Law.

Answer

Beer's

Question

All the following except _____fall under the same class of analysis.

Answer

Conductometry

Question

The shorter the wavelength of the x-ray, the _____ the energy and its penetration power.

Answer

greater

Question

The interaction between x-ray radiation with matter is termed _____.

Answer

X-ray spectroscopy

Question

The major types of interferences encountered in atomic absorption analysis includes the following _____except.

Answer

Magnetic

Question

Flame emission is mainly restricted to the analysis of _____metals.

Answer

alkali

Question

Flame absorption techniques involves the measurement of the _____ radiation by free atomic species.

Answer

absorbed

Question

_____ is that concentration of an element in aqueous solution which absorbs 1% of the incident radiation passing through a cloud of atoms being determined.

Answer

Sensitivity

Question

Which of these is not determined using Flame Emission/Absorption Spectroscopy?

Answer

Carbon

Question

Any effect that changes the signal when analyte concentration remains unchanged is termed?

Answer

Interferance

Question

One of the following is not used in Flame Atomic Absorption Spectroscopy?

Answer

Slit

Question

_____ is a technique in which the emission of light by thermally excited atoms in a flame or furnace is used to measure the concentration of atoms.

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Flame Emission Spectroscopy

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CHM302

Question

Nylon threads are made of ____ polymers

Answer

Polyamide

Question

A polymer Y-X-Y-X-Y-X can be described as ____

Answer

Linear alternating

Question

Which of the following is not a type of polymerisation

Answer

Homologous

Question

____ are difficult to remould after curing

Answer

Thermosets

Question

The chain structure A-A-A-A-B-B-B-B can best be described as a ____ copolymer

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Answer

Block

Question

The dimerisation of acetylene followed by isomerisation in HCl produces ____

Answer

CH2=CH-CCl=CH2

Question

Which of the following monomers gives neoprene on polymerisation

---

Answer

CH2=CH-CCl=CH2

Question

The raw materials for polymer production come from ____

Answer

Petroleum

Question

____ is added to rubber in the vulcanisation process

Answer

Sulphur

Question

Which of the following is the most stable isoprene unit

Answer

cis-polymethyl-1,3-butadiene

Question

What is the tacticity of the PVC chain shown below:

Answer

syndiotatic

Question

Cross-links usually occur at _____ positions on molecules of the polymer

---

Answer

Allylic

Question

_____ polymerisation is characterised by initiation, propagation and termination stages

---

Answer

Radical

Question

Polymers are referred to as ____ when two functional groups are on each monomer that forms it

---

Answer

Bifunctional

Question

Reactions that lead to the formation of bridges and networks between monomers produce ____

Answer

Cross-linked polymers

Question

A _____ copolymer occurs when two or more monomers are randomly distributed

---

Answer

Statistical

Question

A polymer with one type of functional group is referred to as ____

Answer

Homopolymer

Question

Polymer formation from monomers starts by ____

Answer

condensation reaction between monomers

Question

____ polymerisation involves no loss of monomer units

Answer

Addition

Question

_____ are rubber or rubber-like polymers with high degrees of elasticity

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Question

_____ are rubber or rubber-like polymers with high degrees of elasticity

---

Answer

Elastomers

CHM315

Question

Open chain glucose molecule has _____ chiral centers

Answer

4

Question

Glucose reacts with excess CH3I and AgOH to give_____

Answer

pentamethyl ether

Question

Interconversion of monosaccharides is called____

Answer

epimerization

Question

D-glucitol and D-mannitol are both obtained from_____

Answer

D-fructose

Question

The sweetest of common natural sugars is____

Answer

fructose

Question

L-glucose is used for____

Answer

research

Question

D-glucose turns polarized light to_____

Answer

right

Question

The configuration of glucose was first given by_____

Answer

Fischer

Question

The term mutarotation refers to_____

Answer

change in optical activity of glucose

Question

Oxidation of aldoses to aldonic acids is preferred using_____

Answer

HOBr

Question

Chiral center is a carbon atom to which_____

Answer

4 different groups are attached

Question

Fructose sugar have OH groups on all carbons except_____

Answer

carbon 2

Question

Aldose sugars contain C=O group on_____

Answer

carbon 1

Question

Hexose sugars contain_____

Answer

6 carbons

Question

Sugars oxidized by Tollen's reagent are refered to as_____

Answer

reducing sugars

Question

Carbohydrates can be represented by the formula_____

Answer

Cy(H2O)x

Question

Carbohydrates serve as structural material called;

Answer

cellulose

Question

The two main classes of carbohydrates are_____

Answer

sugars and polysaccharides

Question

Carbohydrates consist of the elements_____

Answer

C,H,and O

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Carbohydrates are _____ giving foods

Answer

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Answer

energy

CHM311

Question

All organic matter can be divided into the classes of proteins, carbohydrates , lignin, _____

Answer

pigments, and lipids

Question

The organic material that is the source of most petroleum has probably been derived from the single-celled _____

Answer

planktonic

Question

Metals in the forms of_____ or organometallic compounds are present in the crude mixture in trace amounts,

---

Answer

inorganic salts

Question

Crude oils are principally found in oil reservoirs associated with_____ beneath the earth’s surface.

Answer

sedimentary rocks

Question

Petroleum can be broadly defined as the complex mixture of_____ that occurs in the earth in liquid, gaseous, or solid forms.

Answer

hydrocarbons

Question

This occurrence petroleum-like hydrocarbons in marine sediments forms _____ and the petroleum found in sediments of older geological ages.

Answer

a link between present living organisms

Question

Carbon isotope ratios (12C/13C) indicate that petroleum may be derived in large part from the _____ fractions of organisms.

Answer

Lipid

Question

Most types of petroleum contain complex hydrocarbon compounds termed _____

Answer

porphyrins,

Question

The _____of petroleum is almost completely confined to compounds of biogenic origin.

Answer

optical activity

Question

Biomass is commonly plant matter grown to generate _____ or produce heat.

Answer

electricity

Question

Extensive research into the chemical structure of kerogen has identified _____ as the primary source of oil.

Answer

algae

Question

Although fossil fuels have their origin in ancient biomass, they are not considered _____ by the generally accepted definition

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Answer

biomass

Question

Biomass_____ source, is biological material derived from living, or recently living organisms, such as wood, waste, and alcohol fuels.

Answer

a renewable energy

Question

A number of geologists in Russia adhere to the _____ hypothesis and maintain that hydrocarbons of purely inorganic origin exist within Earth’s interior.

Answer

abiogenic petroleum origin

Question

According to generally accepted theory, petroleum is derived from ancient _____

Answer

biomass.

Question

Sometimes, oil which is formed at extreme depths_____ and become trapped at much shallower depths than where it was formed.

Answer

may migrate

Question

Geologists often refer to the temperature range in which oil forms as an _____

Answer

“oil window”

Question

Temperatures of less than_____are typical for petroleum generation.

Answer

150°C

Question

Chemical activity in_____ allows the organic material in the source rock to change into petroleum without the organic matter simply rotting.

Answer

the absence of oxygen

Question

It is generally agreed that crude oil is derived from marine animal and plant debris subjected to high _____

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CHM391

Question

Estimation of the concentration of an element from a working curve is determined by _____.

Answer

interpolation.

Question

Gaseous metallic atoms in flame do not vibrate or rotate, because they _____.

Answer

are single.

Question

The estimation of the concentration of an element by AAS involves preparation of _____.

Answer

calibration curve.

Question

Atomic Absorption Spectroscopy is used particularly for determining the concentrations of _____.

Answer

metal ions in solutions.

Question

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Question

In Atomic Absorption Spectroscopy, ground state metallic atoms are capable of absorbing radiant energy of their own specific _____ wavelength.

Answer

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Question

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Question

The following are types of bending vibration except _____.

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Electrons are excited from

Answer

HOMO to LUMO

Question

The electromagnetic radiation covers a long range of radiations which are broken down into different regions according to

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Answer

wavelength

Question

Which of the following instruments is used to measure the absorption or emissions of electromagnetic radiation as a function of wavelength?

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Spectrometer

Question

Applications of spectroscopic techniques include

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CHM309

Question

The molecular ion is often given the symbol_____

Answer

M+

Question

All the following are examples of ionazation techniques in MS, except_____

Answer

electron capture

Question

Mass spectrometers have_____ fundamental parts

Answer

FOUR

Question

Peak intensities are expressed as a percentage of that of the most_____ ion which is designated the base peak.

Answer

abundant

Question

The ions formed from the molecules or atoms of a sample are separated in space and detected according to their_____

Answer

mass-charge ratio

Question

Mass Spectrometry (MS) is an analytical technique whereby materials are_____ and dissociated into fragments characteristic of the molecule(s) or elements present in the sample

---

Answer

ionised

Question

The intensity of infrared absorbance obeys_____ law and may be used for quantitative analysis.

Answer

Beer-Lambert's

Question

The IR spectrum is a good indicator of the_____ structure of a compound

---

Answer

molecular

Question

Gas analysis by IR spectrometry using long path length cells has been used to measure concentrations of _____ gases

---

Answer

anaesthetic

Question

Infrared spectroscopy is used to follow reactions by observing the disappearance and appearance of_____

Answer

relevant peaks

Question

Log Io/It =A= εbc , is an expression for which law?

Answer

Beer-Lambert's

Question

Bathochromic shift is a shift to _____ wavelength

Answer

higher

Question

For a UV absorption to occur a _____ centre is required.

Answer

chromophoric

Question

All the following affect the absorption of radiation in the UV/Vis region, except?

Answer

Turbidity

Question

Which of these light sources is applicable to UV region absorption?

Answer

deuterium lamp

Question

The ultraviolet (UV) and visible region of the electromagnetic radiation covers the wavelength range from about_____

Answer

100 nm to about 800 nm

Question

Frequebcy and wavwlength are related by?

Answer

c = vλ

Question

The frequency, v, is the number of_____ passing a given point per second.

Answer

peaks

Question

Wavelength, λ, is the distance between _____ successive peaks.

Answer

two

Question

The absorption of UV/Visible radiation occurs through _____ of electrons within the molecular structure to a higher energy state

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Answer

excitation

Question

The molecular ion is often given the symbol_____

Answer

M+

Question

All the following are examples of ionazation techniques in MS, except_____

Answer

electron capture

Question

Mass spectrometers have_____ fundamental parts

Answer

FOUR

Question

Peak intensities are expressed as a percentage of that of the most_____ ion which is designated the base peak.

Answer

abundant

Question

The ions formed from the molecules or atoms of a sample are separated in space and detected according to their_____

Answer

mass-charge ratio

Question

Mass Spectrometry (MS) is an analytical technique whereby materials are_____ and dissociated into fragments characteristic of the molecule(s) or elements present in the sample

---

Answer

ionised

Question

The intensity of infrared absorbance obeys_____ law and may be used for quantitative analysis.

Answer

Beer-Lambert's

Question

The IR spectrum is a good indicator of the_____ structure of a compound

---

Answer

molecular

Question

Gas analysis by IR spectrometry using long path length cells has been used to measure concentrations of _____ gases

---

Answer

anaesthetic

Question

Infrared spectroscopy is used to follow reactions by observing the disappearance and appearance of_____

Answer

relevant peaks

Question

Log Io/It =A= εbc , is an expression for which law?

Answer

Beer-Lambert's

Question

Bathochromic shift is a shift to _____ wavelength

Answer

higher

Question

For a UV absorption to occur a _____ centre is required.

Answer

chromophoric

Question

All the following affect the absorption of radiation in the UV/Vis region, except?

Answer

Turbidity

Question

Which of these light sources is applicable to UV region absorption?

Answer

deuterium lamp

Question

The ultraviolet (UV) and visible region of the electromagnetic radiation covers the wavelength range from about_____

Answer

100 nm to about 800 nm

Question

Frequebcy and wavwlength are related by?

Answer

$c = v\lambda$

Question

The frequency, v, is the number of_____ passing a given point per second.

Answer

peaks

Question

Wavelength, λ, is the distance between _____ successive peaks.

Answer

two

Question

The absorption of UV/Visible radiation occurs through _____ of electrons within the molecular structure to a higher energy state

Answer

excitation

CHM307

Question

the application of quantum mechanical principles and equations to the study of molecules is called

Answer

Quantum Chemistry

Question

The number of Hamiltonian physical state operators of a particle used in the Schrödinger wave equation is

Answer

2

Question

The measure of the strength of a chemical bond is called

Answer

Bond energy

Question

The wave function for a matter wave can be represented as ψ(x, y, z), meaning that it is a

---

Answer

Three dimensional object

Question

the H-O-H angle is 105 degrees, less than the ideal tetrahedral angle of 109.5 degrees because

---

Answer

lone electron pairs require more space

Question

Oxygen has 8 electrons in its bonding orbital and four in anti-bonding orbital, calculate its bond order

---

Answer

3

Question

The energy of bonding molecular orbital is

Answer

Lower than that of non-bonding

Question

Paramagnetic atoms or mollecules are attracted to a magnetic field

Answer

true

Question

The following are the main aspects of Quantum principles except

Answer

Bond length calculations

Question

_____states that no two fermions can occupy the same quantum state at once

Answer

Pauli exclusion principle

Question

any device that can transform heat into work is refer to as _____

Answer

Heat engine

Question

Both Bohr and Stoner’s systems of writing electron configuration are defective because they can not correctly describe the changes in atomic spectra in a _____ field.

Answer

Magnetic

Question

Electron configuration given by Bohr for Sulphur is 2.4.4.6. This can now be written as

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Answer

1s2 2s2 2p6 3s2 3p4

Question

The first person that proposed that the periodicity in the properties of an element was related to the electronic structure of atom was

---

Answer

Niels Bohr

Question

In electron configuration, the one that corresponds to the lowest electronic energy is called the _____ state.

Answer

Ground

Question

The electrons that determine the chemistry of element are usually found in _____ shell of the atom

---

Answer

Outermost

Question

The standard notation which is used to describe electron configuration of atoms and molecules include the following except

---

Answer

4e

Question

A subshell with azimuttal quantum number (L) equals 2 corresponds to

---

Answer

S-subshell

Question

When electrons move from lower to higher orbital , the energy is

---

Answer

Absorbed

Question

The number of electrons in 4th shell of an atom is _____

Answer

32

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Question

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Answer

32

CHM305

Question

Methoxy propane, Ethoxy ethane and 2-Methoxy propane are ____

Answer

metamers

Question

Arrange these acids in the right order of increasing reactivity with ethers

Answer

HI>HBr>HCl

Question

During hydrolysis of ether, what is it require to increase the rate of the reaction?

Answer

Dilute acid

Question

What are the products formed when ether react with hot tetraoxosulphate (VI) acid

Answer

alcohol and alkylhydrogentetraoxsulphate(VI)

Question

Which one of the products of reaction of ether that is not stable and can decompose violently on heating

Answer

(C2H5)2O-O

Question

Which of these is a product of reaction of alkyl group of an ether in the presence of light?

Answer

C2ClC2Cl5

Question

When the reaction of an ether involves _____ group of the compound, the resulting product will be oxonium salt.

Answer

ethereal oxygen

Question

One of these is not a general property of ethers

Answer

they are more dense than water

Question

Which of these is a method of preparing ethers?

Answer

Oxymecuration-demecuration

Question

Higher halogenated ethers can be prepared by the action of what on the lower halogenated ethers

Answer

Grignard reagent

Question

Heterocyclic compound have at least ____ hetero atom as a ring member

Answer

1

Question

one of this is not a physical property of pyrrole

Answer

Chloroform like smell.

Question

The product of the reaction between Epoxides with lithium diethylamide is _____

Answer

allylic alcohols

Question

What is the product of the reaction C2H5OC2H5 + (CH3CO)2O when ZnCl2 is used as a catalyst?

Answer

CH3COOC2H5

Question

What is the product of the reaction between an ether and hot phosphorus pentachloride which involves the cleavage of carbon-oxygen bond?

Answer

alkyl chlorides

Question

The reaction of Alkene with mercuric trifluoroacetate in the presence of alcohol to give alkoxymecurial compound which on reduction gives _____

Answer

an ether

Question

the action of Grignard reagent on lower halogenated ethers can be used to prepare _____

Answer

Higher homologues of ethers

Question

heating alkyl halides with dry silver oxide (Ag2O) gives _____

Answer

an ether

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The following are methods used for the preparation of ethers except

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Oxidation of secondary alcohols to ketones

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Which of these is a three membered cyclic ether?

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Li < Na < K < Rb < Cs < Fr

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Answer

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The isotope of hydrogen which is most dangerous to handle because of radioactivity is

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Which of the following is not a natural source of hydrogen?

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How many lone pairs and bond pairs are present in XeOF4

Answer

3 and 4

Question

According to the VSEPR theory, how many total electron pair are around Xenon in XeO2F2?

Answer

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Question

Apply the VSEPR model to XeF4. Which of the following molecular shapes is consistent with the model?

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A complex with the composition [MA2B2]X2 is found to have no geometrical isomers. Both A & B are monodentate ligands. The structure of the complex is:

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2Xe, 4HF, O2

CHM301

Question

Which statement is incorrect?

Answer

For an endothermic process, ΔH is negative.

Question

Calculate the minimum partial pressure of nitrogen that is necessary to achieve an aqueous ideal-dilute solution of concentration 1.00 mmol dm-3.

Answer

154 KPa

Question

The temperature dependence of enthalpy reaction is given by _____

Answer

Kirchhoff.s law

Question

What is the unit of heat and work?

Answer

J and J

Question

The total energy of a system in thermodynamics is called_____

Answer

Internal energy

Question

All combustion reactions are_____

Answer

Exothermic

Question

If 5.50 grams of sucrose, C12H22O11, are dissolved in 12.8 grams of water, what will be the vapour pressure of the resulting solution at 25oC if vapor pressure of water at 25oC is 23.8 mm Hg?

Answer

23.3 mm Hg

Question

The vapour pressure of a solution containing a nonvolatile solute is directly proportional to the_____

Answer

mole fraction of the solvent

Question

A colligative property depends on_____

Answer

The relative no of moles of solute to solvent

Question

The phenomenon of lowering of vapour pressure is defined as_____

Answer

Decrease in vapour pressure of a solvent on addition of a non-volatile non electrolyte solute in it

Question

Isobaric process describes_____

Answer

Constant pressure

Question

The second law of thermodynamics is based on the concept of:

Answer

entropy

Question

The Entropy of a spontaneous process _____

Answer

Increases

Question

The entropy of the universe remains unchanged in a _____process

---

Answer

Reversible

Question

An example of a highly disordered system is____

Answer

gas

Question

The unit of molar heat capacity is____

Answer

J K-1 mol-1.

Question

The product of heat capacity and the molar mass of a substance is called____

Answer

molar heat capacity

Question

The first law of thermodynamics is often referred to as ____

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Question

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Answer

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Question

Isothermal process describes_____

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STT311

Question

_____ is a function of the observable random variables in a sample and know

Answer

Statistic

Question

Let \(Y\) be a random variable with mean 11 and variance 9. Using Tchebyshelff’s theorem, find a lower bound for \(P(6<y<16)\)< p="" style="box-sizing: border-box;"></y<16)\)<>

Answer

0.64

Question

If two events, A and B, are such that P(A) = 0.5, P(B) = 0.3, and \(P(A\cap B)=0.1\) find \(P\left(\frac{A}{A\cup B}\right)\)

Answer

1

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Answer

(1/7)

Question

The relative humidity, Y, when measured at a location, has a probability density function given by: $f(y)=ky^3(1-y)^2$ for $0\leq y \leq 1$ and $f(y)=0$ elsewhere , find the value of k that makes f(y) a density function

---

Answer

60

Question

Given that $X_{1}, X_{2},\cdots Xn$ are mutually independent and normally distributed with mean σ and variance σ where the density function is given as: $f(x)=\frac{1}{\sqrt{2\pi {\sigma}^2}}e^{-2\sigma^2(x-\mu)^2 }$, what is the maximum likehood estimator for the variance, σ^{2}

Answer

$\frac{1}{n}\sum_{i=1}^{n}(X_{i}-\overrightarrow{X})^2$

Question

Calculate the variance of Y for a continuous random variable XY which has the following joint density function: f(x,y) = x+y for 0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(35/72)

Question

Calculate the variance of X for a continuous random variable XY which has the following joint density function:$f(x,y) = x+y$ for $0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(1/144)

Question

What is the expectation of \(XY\) if the continuous random variable XY has the following joint density function: \(f(x,y) = x+y\) for \(0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(1/3)

Question

Estimate the variance of a continuous random variable C with the following density function: \(f(c) = 1\) for \(0< c < 1 \) and \(f(c) =0\) elsewhere

---

Answer

(1/12)

Question

Compute the mean of a continuous random variable A with the following density function: \(f(a) = 1\) for \(0<a<="" p="" style="box-sizing: border-box;"></a

---

Answer

(1/2)

Question

The continuous type of random variable X has the following density function:\
(f(x)=a-x for 0<x<="" p="" style="box-sizing: border-box;"></x

Answer

(1/9)

Question

The Central Limit Theorem says that the sampling distribution of the sample mean is approximately normal if

Answer

the sample size is large

Question

Six men and five women apply for an executive position in a small company. Two of the applicants are selected (at random) for interviews. How many women do you expect to be in the interview pool?

Answer

(10/11)

Question

The probability that an alarm system will work when there is a danger in a construction site is 0.99, the probability of the alarm system will work if there is no danger is 0.02, and the probability of occurrence of any danger in this construction site is 0.03. What is the probability of a danger, given that the alarm system works?

Answer

0.60489

Question

Let $X\sim N(1,9)$ and $Y\sim N(2,16)$). Furthermore, X and Y are independent. For which value of v does it hold that $(P(X+Y)\leq v)=0.975$) ?

Answer

-6.8

Question

Let X be a random variable such that $E[X] = \ln 2$. What can be deduced about e^{-x}

Answer

$E[e^{-x}]\geq 1/2$

Question

About the independent events A and B it is known that P(A|B) = 0.2 and P(B|A) = 0.5. compute $P(A\cup B)$

Answer

0.2

Question

You arrive at a bus stop at 10 o’clock, knowing that the bus will arrive at some time uniformly distributed between 10 and 10:30. What is the probability that you will have to wait longer than 10 minutes?

Answer

(2/3)

Question

The density function of X is given by $f(x)= a+bx^{2}$ when $0\leq x \leq 1$ and $f(x) = 0$ elsewhere. Given that $E(X) = 0.6$, find (a , b)

Answer

(3/5,6/5)

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Question

If two events, A and B, are such that P(A) = 0.5, P(B) = 0.3, and $P(A\cap B)=0.1$ find $P\left(\frac{A\cap B}{A\cup B}\right)$

Answer

(1/7)

Question

The relative humidity, Y, when measured at a location, has a probability density function given by: $f(y)=ky^3(1-y)^2$ for $0\leq y \leq 1$ and $f(y)=0$ elsewhere , find the value of k that makes f(y) a density function

Answer

60

Question

Given that $X_{1}, X_{2},\cdots Xn$ are mutually independent and normally distributed with mean σ and variance σ where the density function is given as: $f(x)=\frac{1}{\sqrt{2\pi {\sigma}^2}}e^{-2\sigma^2(x-\mu)^2 }$, what is the maximum likehood estimator for the variance, σ^{2}

Answer

$\frac{1}{n}\sum_{i=1}^{n}(X_{i}-\overrightarrow{X})^2$

Question

Calculate the variance of Y for a continuous random variable XY which has the following joint density function: f(x,y) = x+y for 0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(35/72)

Question

Calculate the variance of \(X\) for a continuous random variable XY which has the following joint density function:\(f(x,y) = x+y\) for \(0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(1/144)

Question

What is the expectation of \(XY\) if the continuous random variable XY has the following joint density function: \(f(x,y) = x+y\) for \(0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(1/3)

Question

Estimate the variance of a continuous random variable C with the following density function: \(f(c) = 1\) for \(0< c < 1 \) and \(f(c) =0\) elsewhere

Answer

(1/12)

Question

Compute the mean of a continuous random variable A with the following density function: \(f(a) = 1\) for \(0<a<="" p="" style="box-sizing: border-box;"></a

Answer

(1/2)

Question

The continuous type of random variable X has the following density function:\
(f(x)=a-x for 0<x<="" p="" style="box-sizing: border-box;"></x

Answer

(1/9)

Question

The Central Limit Theorem says that the sampling distribution of the sample mean is approximately normal if

Answer

the sample size is large

Question

Six men and five women apply for an executive position in a small company. Two of the applicants are selected (at random) for interviews. How many women do you expect to be in the interview pool?

Answer

(10/11)

Question

The probability that an alarm system will work when there is a danger in a construction site is 0.99, the probability of the alarm system will work if there is no danger is 0.02, and the probability of occurrence of any danger in this construction site is 0.03. What is the probability of a danger, given that the alarm system works?

Answer

0.60489

Question

Let $X\sim N(1,9)$ and $Y\sim N(2,16)\ $). Furthermore, X and Y are independent. For which value of v does it hold that $ (P(X+Y)\leq v)=0.975$?

Answer

-6.8

Question

Let X be a random variable such that $E[X] = \ln 2$. What can be deduced about e^{-x}

Answer

$E[e^{-x}]\geq 1/2$

Question

About the independent events A and B it is known that P(A|B) = 0.2 and P(B|A) = 0.5. compute $P(A\cup B)$

Answer

0.2

Question

You arrive at a bus stop at 10 o’clock, knowing that the bus will arrive at some time uniformly distributed between 10 and 10:30. What is the probability that you will have to wait longer than 10 minutes?

Answer

(2/3)

Question

The density function of X is given by $f(x)= a+bx^{2}$ when $0\leq x \leq 1$ and $f(x) = 0$ elsewhere. Given that $E(X) = 0.6$, find (a , b)

Answer

(3/5,6/5)

CIT392

Question

The command used to delete a particular column in a relation is _____.

Answer

ALTER , DROP

Question

The SQL used by front-end application programs to request data from the DBMS is called _____

Answer

DML

Question

Which operator is used to compare a value to a specified list of values? ____

Answer

In

Question

Which of the following is not a valid SQL type? ____

Answer

Decimal

Question

Which data manipulation command is used to combines the records from one or more tables? ____

Answer

join

Question

The two general data administration commands in SQL are as follows:

Answer

START and DELETE AUDIT

Question

Which of the following category of SQL commands has ‘ SELECT’ as its basic command

Answer

Data control Language

Question

Which of this is is the most concentrated focus of SQL for modern relational database users?

Answer

Data Query Language

Question

The data manipulation language, as part of SQL command, consists of three basic commands EXCEPT

Answer

INSERT

Question

Which of these is NOT one of the main categories of SQL command?

Answer

Data Definition Language

Question

In which of the following programming language do you use ‘char’ as a data type to store characters

---

Answer

Java.net

Question

Which of these is NOT one of the name rules in COBOL programming language?

Answer

They must contain at least 30 characters, but not more than 90 characters.

Question

Concerning Ada, which of these is NOT an example of Relational operators ?

Answer

&

Question

The common data types in Ada programming includes ALL EXCEPT

Answer

Access

Question

Concerning Ada, which of these is not correct about variables?

Answer

An allocation statement is used to set a variable to a new value

Question

Which of these does not belong to one of the 5 independent libraries for input/output operations in Ada?

Answer

Selecton

Question

Which of these is NOT a known feature of Ada programming language

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Answer

Schema

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Which of these is NOT a known feature of Ada programming language

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Answer

Schema

Question

Which of these is FALSE about Aggregate functions?

Answer

Aggregate functions operate on sets of rows to give multiple results per group

Question

Translator which is used to convert codes of assembly language into machine language is termed as____

Answer

assembler

Question

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Question

Operating System maintains the page table for

Answer

each process

Question

What is compaction?

Answer

a technique for overcoming external fragmentation

Question

The page table contains

Answer

base address of each page in physical memory

Question

Program always deals with

Answer

logical address

Question

The address of a page table in memory is pointed by

Answer

page table base register

CIT344

Question

Race in which stable state depends on order is called

Answer

critical race

Question

In synchronous circuits, present state is determined by

Answer

flip-flops

Question

Making of transition table consists of

Answer

6 steps

Question

Table that is not a part of asynchronous analysis procedure is

---

Answer

excitation table

Question

Asynchronous circuits are useful in application where input signals may

---

Answer

both a and b

Question

Inputs of SR latch are

Answer

s and r

Question

First step of analysis procedure of SR latch is to

Answer

label outputs

Question

NAND latch works when both inputs are

Answer

1

Question

Output of SR latch is

Answer

q and q'

Question

SR latch consists of

Answer

2 inputs

Question

The programmability and high density of PLDs make them useful in the design of

---

Answer

ASIC

Question

ASIC stands for

Answer

Application Specific Integrated Circuits

Question

PLDs with programmable AND and fixed OR arrays are called

Answer

PLA

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Answer

PLA

Question

The full form of EPROM is

Answer

Erasable Programmable Read Only Memory

Question

The full form of PROM is

Answer

Programmable Read Only Memory

Question

For reprogrammability, PLDs use

Answer

EPROM

Question

ROM consist of

Answer

NAND and OR arrays

Question

The full form of ROM is

Answer

Read Only Memory

Question

VLSI chip utilizes

Answer

All of the options

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The full form of ROM is

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Read Only Memory

Question

VLSI chip utilizes

Answer

All of the options

CIT342

Question

String concatenation is _____ operation

Answer

associative

Question

If V is a set, the set of all non-empty strings of elements of V is denoted by _____

Answer

V+.

Question

When a string appears literally in _____ code, it is known as a string literal

---

Answer

source

Question

A variable declared to have a _____ data type usually causes storage to be allocated in memory that is capable of holding some predetermined number of symbols.

Answer

string

Question

String substitution may be extended to an entire ____

Answer

language

Question

The term _____ is used to suggest strings in which the stored data does not necessarily represent text

---

Answer

all of the above .

Question

If Σ = {a, b, …, z}, s = bear, and t = hug, then ts is ____

Answer

hugbear

Question

There are _____ types of string datatypes

Answer

two

Question

Alphabets are important in the use of which of the following? ____

Answer

all of the above

Question

_____ function as manipulators of integers, graphs, programs, and many other kinds of entities

---

Answer

computations

Question

Parsing expression grammars (PEGs) is a more recent generalization of _____ designed around the practical expressiveness needs of programming language and compiler writers

---

Answer

Top-Down Parsing Language

Question

_____ is a highly minimalist analytic grammar formalism developed in the early 1970s

---

Answer

Top-Down Parsing Language

Question

The _____ directly implements unrestricted analytic grammars

Answer

Language Machine

Question

_____ is a form of analytic grammar designed for linguistics

Answer

Link Grammars

Question

Which of the following is an example of analytic grammar formalisms?

Answer

any of the options

Question

_____ grammars increase the expressiveness of conventional generative grammars by allowing rewrite rules to operate on parse trees instead of just strings

---

Answer

Tree-adjoining

Question

Which of the following statements is not true of regular grammars?

Answer

the right-hand side is not restricted

Question

A context-free language can be recognized in _____ time

Answer

O(n3)

Question

whic of the following is one of the two important types of grammars?

Answer

context-free grammar

Question

Noam Chomsky first formalized generative grammars in _____

Answer

1956

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Question

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Answer

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CIT322

Question

XML and HTML will be replaced by XHTML

Answer

It is false

Question

1. This is used to deliver audio or video to the visitors to a site real-time. _____

Answer

Streaming server

Question

_____a network contained within a user's home

Answer

HAN

Question

_____is a set of rules that allows files to be exchanged between computers on the Internet

---

Answer

FTP

Question

What is the port number for HTTP?

Answer

80

Question

DNS is like a giant phone book where you can find an IP address knowing the

---

Answer

URL

Question

What is the port number for POP3?

Answer

110

Question

A _____s a sequence of octets and consists of a header followed by a body

Answer

Packet

Question

The transport layer protocol is connectionless

Answer

UDP

Question

ICMP (Internet Control Message Protocol) is

Answer

A protocol that handles error and control messages

Question

Which of the following TCP/IP protocol is used for transferring electronic mail messages from one machine to another?

Answer

SMTP

Question

_____is the method of exchanging digital messages from an author to one or more recipients

---

Answer

Email

Question

Most Web pages are prepared using the Markup languages such as_____

Answer

HTML

Question

DSL provides a _____connection to ISP

Answer

point-to-point

Question

Digital Subscriber Line (DSL) is a family of technologies that provides digital data transmission over the wires of a local telephone network. DSL service is delivered simultaneously with regular _____

Answer

Telephone

Question

It allows dial up into the Internet at speeds ranging from 64 to 128 kbps?

Answer

ISDN

Question

_____form of Internet access that uses the facilities of the public switched telephone network (PSTN) to establish a dialed connection to an Internet service provider.

Answer

Dial-up

Question

_____refer to an intranet that is partially accessible to authorised

---

Answer

Extranet

Question

The Acronym PDAs means_____

Answer

Personal Digital Assistants

Question

The Internet also referred to as the_____in simplest terms

Answer

Nets

CIT381

Question

Systems protection includes four levels, which of these is not part of the four?

Answer

internet

Question

Reduction in disk motion involves _____

Answer

putting blocks that are likely to be accessed in sequence close to each other, preferably in the same cylinder

Question

The solution that deals with dedicating a sector on the disk to the bad block list is _____

Answer

hardware solution

Question

Checking for file consistency is another way of _____

Answer

safeguarding file

Question

Full dump and incremental dump are two types of _____

Answer

backups

Question

Intrusion can be detected through all except _____

Answer

camera

Question

Another name for block cache is _____

Answer

buffer cache

Question

The most common technique used to reduce disk accesses is _____

Answer

block cache

Question

A collection of addressable sectors in secondary memory that an OS or application can use for data storage is referred to as _____

Answer

volume

Question

Space management techniques include _____

Answer

all of the options

Question

One of these is not an operation supported by file management system

---

Answer

none of the options

Question

FMS stands for _____

Answer

file management system

Question

The most common form of file structure is _____

Answer

sequential

Question

_____ is the least-complicated form of file organisation

Answer

pile/serial

Question

One of these is not a file oganisation criteria

Answer

ease of access

Question

_____ is a value that indicates the number of processes that are currently using (have opened) a particular file

---

Answer

usage count

Question

_____ is a suffix to the name of a computer file applied to indicate the encoding convention or file format of its contents

---

Answer

file name extension

Question

Which of the following statements is false regarding "field"

Answer

it is made up of a number of files

Question

A number of fields make up a _____

Answer

record

Question

Elements of a file include all except _____

Answer

all of the options

Question

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CIT371

Question

Which of these is not true for explicit representation of curves?

Answer

Rotationally variant

Question

A normalized vector z is denoted as

Answer

$\hat{z}$

Question

For a current pixel (i,j), if the midpoint test is less than zero in mid point circle algorithm, the next pixel is

Answer

(i+1, j-1)

Question

A cartesian coordinate system positioned in space is called _____

Answer

cartesian coordinate frame

Question

Which of these is (are) orthonomal matrix?

Answer

Rotation matrix

Question

_____ defines an orthonomal matrix

Answer

Magnitudes of the column vectors are one and the vectors are orthogonal

Question

Which of these is not true of a matrix?

Answer

Matrix multiplication is commutative

Question

Which of these algorithms performs only integer arithmetic in drawing lines?

Answer

Bresenham

Question

The colour of an object at the intersection point depends on

Answer

The texture colour

Question

When a variable is expressed as a function of another in line drawing, it is considered to be in what form

---

Answer

Explicit

Question

The function of the horizontal polarizer in liquid crystal display is _____

Answer

to act as a filter

Question

components of a CRT exclude which of the following?

Answer

horizontal reflection plates

Question

_____ is an OpenGL that adds support for GUI tools like sliders

---

Answer

glui

Question

which of these is not a recognised coordinate system?

Answer

normalized viewer coordinate system

Question

Today's graphic devices are

Answer

raster based

Question

The minimum refresh rate needed to avoid flicker in CRT is called

---

Answer

critical fusion frequency

Question

Graphic pipeline is carried out in which of the following sequence?

Answer

model to scene to image

Question

Video arcade came into limeligth in the

Answer

middle to late 80's

Question

_____ tree has each of its internal node correspond to a split-line

---

Answer

k-d tree

Question

The mouse was invented by _____

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CIT353

Question

An approach in user modeling where the user moves between levels of expertise based on quantitative measure of what he knows is called

---

Answer

quantification

Question

A task specific tool that leads the user through a task, step by step, using the user’s answers to specific questions is

---

Answer

wizards

Question

Which of the following is not a technical support offered to the system users

---

Answer

card sorting

Question

A method of evaluating the user interaction of a working prototype or final product is called

---

Answer

benchmarking

Question

What is the subject testing method

Answer

a method that involve testing of subjects for the most quantitative data.

Question

Subject_in_Tandem is

Answer

pairing of subjects in a usability test to gather important information on the ease of use of a product

Question

Which of the following prototyping methods is used in the early stages of development to validate and refine the usability of a system

---

Answer

rapid prototyping method

Question

The technique of learning about user’s goals and users’ ways of working is called

---

Answer

activity analysis

Question

Usability method used in preliminary stages of development to get a sense of a situation is called

---

Answer

activity analysis

Question

A review method whereby expert designers review products or projects to ensure the same quality across multiple products is called

---

Answer

consistency inspection

Question

In usability test, which is a technique from given below options, in which you have two participants work together to perform the tasks.

Answer

Co-Discovery

Question

Form-filling interfaces are used for:

Answer

Data entry

Question

A small picture that is used to represent a closed window is said to be a/an:

Answer

Icon

Question

Building things from user's perspective is called _____.

Answer

Usability

Question

Example of form fill interface is_____.

Answer

Data entry form on some university web

Question

Taking some real world concept to perform different tasks that represent some idea, inside the computer is a type of_____ .

Answer

Direct Manipulation

Question

Which interface system is based on the question/answer dialogue?

Answer

Query interface

Question

Certain factors that help us to interact with graphical based systems is_____ .

Answer

Direct manipulation

Question

What will be the gulf of execution if the user is able to formulate and perform the actions easily?

Answer

Smaller

Question

Which of the following is true regarding "Visibility"?

Answer

The more visible functions are, the more likely users will be able to know what to do next. (page 104)

Question

An approach in user modeling where the user moves between levels of expertise based on quantitative measure of what he knows is called

Answer

quantification

Question

A task specific tool that leads the user through a task, step by step, using the user’s answers to specific questions is

Answer

wizards

Question

Which of the following is not a technical support offered to the system users

---

Answer

card sorting

Question

A method of evaluating the user interaction of a working prototype or final product is called

---

Answer

benchmarking

Question

What is the subject testing method

Answer

a method that involve testing of subjects for the most quantitative data.

Question

Subject_in_Tandem is

Answer

pairing of subjects in a usability test to gather important information on the ease of use of a product

Question

Which of the following prototyping methods is used in the early stages of development to validate and refine the usability of a system

---

Answer

rapid prototyping method

Question

The technique of learning about user’s goals and users’ ways of working is called

---

Answer

activity analysis

Question

Usability method used in preliminary stages of development to get a sense of a situation is called

---

Answer

activity analysis

Question

A review method whereby expert designers review products or projects to ensure the same quality across multiple products is called

---

Answer

consistency inspection

Question

In usability test, which is a technique from given below options, in which you have two participants work together to perform the tasks.

Answer

Co-Discovery

Question

Form-filling interfaces are used for:

Answer

Data entry

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CIT351

Question

The _ development will become increasingly more important as the software industry evolves.

Answer

Component

Question

In using third party objects, the __ that implements the object must be referenced.

Answer

Assembly

Question

Reusable types will often exist in binary modules or __.

Answer

Assemblies

Question

Although one can write GUI code from scratch, it is far more common to use the __.

Answer

Forms Designer

Question

Generally, method and variable names are distinguished by means of their __.

Answer

CASE

Question

Visual Studio.NET manages a lot of the details of project management such as building, debugging, and GUI __

Answer

Development

Question

The Visual Studio.NET environment requires one to explicitly set assembly _

Answer

References

Question

Generally, __ codes are housed in reusable objects

Answer

Application

Question

C# is specifically used in writing applications for both hosted and __ systems.

Answer

Embedded

Question

When designing web pages using C#, the entire code that implements the web page exists in a library _

Answer

Assembly

Question

In C# programming, the bool keyword is used to declare __

Answer

Variables

Question

C# is well-suited for deployment in ___ settings.

Answer

Distributed

Question

In the expression, int count , the int represents the __

Answer

Data type

Question

Generally, C# is said to be a strongly typed language, thus every variable and object must have a __.

Answer

Declared type

Question

All the following are common C# Types except ___

Answer

Entity Types

Question

In C# programming, int variables are stored signed __ -bit integer values.

Answer

32

Question

The process of converting a value of a value type into a value of a corresponding reference type is described as __.

Answer

Boxing

Question

Generally, In C# programming, the decimal keyword denotes a __-bit data type.

Answer

128

Question

In the expression, int count , the count represents the __

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Variable name

Question

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CIT341

Question

_____ statement is the most basic of all the control flow statements.

Answer

If-Then

Question

Non-static fields are also known as _____.

Answer

Instance Variables

Question

_____ statement provides a compact way to iterate over a range of values

---

Answer

For

Question

Which of the following is not a benefit of bundling code into individual software objects?

Answer

Dependability

Question

Which memory allocation algorithm allocates from the smallest suitable free block?

Answer

Best fit

Question

The slogan “reduce, reuse, recycle” prescribes three strategies for _____.

Answer

Reducing the environmental costs associated with waste materials.

Question

A programme that loses track of objects before it destroys them suffers from _____

Answer

Memory leak

Question

A programme that contains a reference to a destroyed object is known as _____

Answer

Dangling reference

Question

All successful searches in a tree terminate at _____

Answer

Internal node

Question

getKey is _____.

Answer

A method that returns the object contained in the root node of a tree

Question

A stack is also referred to as _____

Answer

Last-In-First-out

Question

In a stack, insertions and deletions are done at _____.

Answer

The top of the stack

Question

Which of the following is not a characteristic of a good hash function?

Answer

It brings complication

Question

The depth-first traversal method which visits the root last is known as _____

Answer

Postorder

Question

Which of the following is not a depth-first traversal method?

Answer

Transorder traversal

Question

Multi-dimensional arrays can be stored as linear arrays in order to _____.

Answer

Reduce the computation time and memory

Question

An array consists of a group of elements that are accessed by _____ .

Answer

Indexing

Question

Data Structures can also be referred to as _____

Answer

Data aggregate

Question

Object-Oriented languages provide explicit support for expressing abstract data types by means of _____ .

Answer

Classes

Question

Abstract Data Type is a collection of data objects characterized by _____

Answer

How the objects are accessed

Question

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CIT333

Question

One of the major tasks during system implementation is __

Answer

Providing overall planning and coordination for the implementation

Question

___ is one of the acceptable approaches of writing Modular programs.

Answer

object-oriented design

Question

A data structure is the ___

Answer

representation of the logical relationship among individual data elements

Question

Information hiding refers to the ____

Answer

information contained within a module is inaccessible to modules that have no need for such information

Question

___ is an empirical investigation conducted to provide stakeholders with information about the quality of the product or service under test

---

Answer

software testing

Question

The term System procedure is ___

Answer

precise specification of processing

Question

Providing appropriate training for personnel happens during

Answer

system implementation

Question

… involves preparation of site facilities

Answer

system implementation

Question

Within the context of software engineering, software quality can described as ___

Answer

The totality of functionality and features of a software product that bear on its ability to satisfy stated or implied needs

Question

The term Software architecture refers to ___

Answer

overall structure of the software components and the ways in which that structure provides conceptual integrity for a system

Question

Software engineering is essentially a ____

Answer

computer science discipline

Question

… is a general systems concept that is the degree to which a system’s components may be separated and recombined

---

Answer

Modularity

Question

The acronym ___ best represents the phases of the software cycle and the order in which those phases are executed.

Answer

SDLC

Question

In --- model, each phase produces deliverables required by the next phase in the life cycle

---

Answer

general

Question

The ___ model is an intuitive approach to the waterfal model

Answer

incremental

Question

There are --- phases in spiral model

Answer

four

Question

… is the process of checking that a software system meets specifications and that it fulfils its expected purpose

---

Answer

verification and validation

Question

The ___ inspection is carried out without formal preparation(of any presentation or documentations

---

Answer

Walkthrough

Question

Any type of software testing that seeks to reveal clash of individual software modules to each other is known as ---

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Answer

integration testing

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CIT311

Question

_____ is a program that allows you to establish a virtual terminal connection between two machines using TCP/IP.

Answer

Telnet

Question

Which of the following constitutes the different physical media used by repeaters?

Answer

Ethernet cable and fibre optic cable

Question

_____ is the situation in which when too many packets are present in the subnet, performance degrades

---

Answer

Congestion

Question

Static algorithm includes the following except ….

Answer

Connection routing

Question

_____ is a system whereby a computer user can exchange messages with other computer users or group of users via a communications network.

Answer

Electronic mail

Question

In a multimedia presentation, the ultimate user of the system is a _____.

Answer

Human being

Question

_____ involves the channel control of all workstations in a network.

Answer

Polling

Question

The following does not consist of sliding window technique except

---

Answer

Go back N and selective repeat

Question

Which of the following deals with how to keep the fast sender from overflowing a slow receiver by buffer at the receiver sides and acknowledgement?

Answer

Flow control

Question

_____ focuses on methods of sharing a single transmission medium.

Answer

Medium Access Control

Question

The average of errors at different locations of an information sequence of length occuring with different probabilities for a linear block code is defined as .....

Answer

bit error probability

Question

One of the earliest codes studied in coding theory is .....

Answer

Hamming codes

Question

..... is a finite set F with two binary operations, addition and multiplication, denoted, respectively, by + and -

---

Answer

Galois field

Question

The resulting discrete-time channel constituting a BSC with crossover probability consists of all except .....

Answer

the sensor

Question

The dimensionality of the BPSK code waveform is .....

Answer

n = k/R

Question

..... is the smallest range of positive frequencies

Answer

bandwidth

Question

..... is not one of the parameters used to measure bandwith efficiency.

Answer

wavelegth of spectrum

Question

The information about power spectral density helps in determining _____

Answer

The required Tramission Bandwith of the modulation scheme and their bandwith efficiency

Question

Information about the frequency content, or spectrum, of the signals is prided by the ……

Answer

Fast Fourier Transform

Question

The process of communication consists of transmission of the output of an information source over a…….. channel.

Answer

communication

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CIT309

Question

A Stack-organised Computer uses instruction of

Answer

Zero addressing

Question

The amount of time required to read a block of data from a disk into memory is composed of seek time, rotational latency, and transfer time. Rotational latency refers to

---

Answer

the time its takes for the platter to make a full rotation

Question

SIMD represents an organization that __

Answer

includes many processing units under the supervision of a common control unit

Question

Routine executed in response to an interrupt request is called _____routine.

Answer

Interrupt service

Question

Stack is a _____list.

Answer

LIFO

Question

The reason for the implementation of the cache memory is

Answer

The difference in speeds of operation of the processor and memory

Question

In a 4M-bit chip organisation has a total of 19 external connections.then it has _____ address if 8 data lines are there.

Answer

9

Question

The number of external connections required in 16 X 8 memory organisation is

---

Answer

14

Question

Circuits that can hold their state as long as power is applied is

---

Answer

Static memory

Question

The logical addresses generated by the CPU are mapped onto physical memory by

---

Answer

MMU

Question

Difference between ROM and RAM is

Answer

both B and C

Question

A computer can't do a single work without

Answer

CPU

Question

In computer, EEPROM stands for

Answer

electronically erasable programmable read only memory

Question

Main purpose of computer secondary storage device is to

Answer

permanently store data

Question

In a computer, ALU can perform

Answer

all of the options

Question

What is LRU algorithm?

Answer

Pages out pages that have been least used recently

Question

Which of the following is responsible for coordinating various operations using timing signals?

Answer

Control unit

Question

Which of the following is not involved in memory write operation?

Answer

Data bus

Question

What is the purpose of Stack Pointer (SP) register?

Answer

It is used for accessing stack

Question

What is the purpose of RAID system?

Answer

It increases the disk storage capacity and availability

Question

A Stack-organised Computer uses instruction of

Answer

Zero addressing

Question

The amount of time required to read a block of data from a disk into memory is composed of seek time, rotational latency, and transfer time. Rotational latency refers to

---

Answer

the time its takes for the platter to make a full rotation

Question

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DAM301

Question

Which of the following is not related to dimension table attributes?

Answer

Equally unavailable

Question

Data transformation includes which of the following?

Answer

A process to change data from a detailed level to a summary level

Question

Fact tables are which of the following?

Answer

Completely normalized

Question

The generic two-level data warehouse architecture includes which of the following?

Answer

Data that can extracted from numerous internal and external sources

Question

A snowflake schema is which of the following types of tables?

Answer

All of the options

Question

A data warehouse is which of the following?

Answer

Organized around important subject areas.

Question

An operational system is which of the following?

Answer

A system that is used to run the business in real time and is based on current data.

Question

A goal of data mining includes which of the following?

Answer

To explain some observed event or condition

Question

The @active data warehouse architecture includes which of the following?

Answer

All of the options.

Question

Data scrubbing is which of the following?

Answer

A process to upgrade the quality of data before it is moved into a data warehouse

Question

_____ is held in the catalog of the warehouse database system.

Answer

Algorithmic level metadata.

Question

_____defines the structure of the data held in operational databases and used byoperational applications.

Answer

Operational metadata.

Question

_____ is the specialized data warehouse database.

Answer

Redbrick.

Question

_____ is the heart of the warehouse.

Answer

Data warehouse database servers.

Question

_____predicts future trends & behaviors, allowing business managers to make proactive,knowledge-driven decisions.

Answer

Data mining.

Question

_____describes the data contained in the data warehouse.

Answer

Metadata.

Question

The time horizon in Data warehouse is usually _____.

Answer

5-10 years.

Question

The important aspect of the data warehouse environment is that data found within the datawarehouse is_____.

Answer

All of the options

Question

Expansion for DSS in DW is_____.

Answer

Decision Support system

Question

_____ is a subject-oriented, integrated, time-variant, nonvolatile collection of data in support of management decisions.

Answer

Data Warehousing.

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I × ω; where I: moment of inertia of the body, ω: angular velocity

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While Young's modulus ‘E’ relates to change in length and bulk modulus ‘K’ relates to change in volume, modulus of rigidity ‘G’ relates to change in:

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shape

Question

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Question

A spring with a force constant of 100 Newtons per meter is loaded with a mass of 1.0 kilogram. The period of vibration of this system is:

Answer

0.63 seconds

Question

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A car is moving along a straight horizontal road at a speed of 20 meters per second. The brakes are applied and a constant force of 5000 Newtons decelerates the car to a stop in 10 seconds. The mass of the car is:

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PHY308

Question

If the output feedback signal aids the input signal, the signal is known as

---

Answer

Positive feedback

Question

The condition that corresponds to forward-bias for base emitter junction and reverse-bias for base collector junction is

---

Answer

Active region

Question

The following condition corresponds to reverse-bias for both base emitter and base collector junctions

Answer

Cut-off open circuit condition

Question

Class C amplifiers are used as ____

Answer

use in electronics equipment

Question

Common Emitter Amplifier configuration is called a

Answer

All of the above

Question

Transistors are classified as either NPN or

Answer

PNP

Question

The following are terminals of a Bipolar Junction Transistor except

Answer

None of the above

Question

Diodes are made up from two pieces of the following semiconductor material to form a simple PN-junction

---

Answer

Either of the above

Question

Semiconductor devices that have three or more elements are called

---

Answer

Transistors

Question

Power converted into heat from transistors, resistors or any other component makes any electronic circuit

---

Answer

Inefficient

Question

The size of a power transistor is made considerably large to

Answer

dissipate heat

Question

In an LC oscillator, the frequency of oscillator ___ L or C

Answer

inversely proportional to the square root of

Question

Which of the classes of amplifier can use either single-ended or push-pull and its bias is usually less critical

Answer

Class A

Question

In an ideal transformer, primary winding resistance is

Answer

Zero

Question

Which among the following classes of amplifier has the maximum theoretical efficiency of less than 40%

Answer

Class A

Question

Which of the following is not a class of amplifier operations

Answer

Class BC

Question

For an amplifier, the following gains 20 times the common log of the output to input ratio except

Answer

Power Gain

Question

The following is an example of an Amplifier Gain except

Answer

None of the above

Question

The magnitude of the transfer function of an Amplifier is termed the

Answer

Gain

Question

The relationship of the input to the output of an Amplifier is called the

Answer

Transfer function of the amplifier

PHY301

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PHY314

Question

What is the ratio of the absolute error to the actual value?

Answer

Relative error

Question

Absolute error = actual value minus ___.

Answer

Measured value

Question

What is the error that is inherent in the statement of the problem itself?

Answer

Inherit error

Question

All the following are types of error EXCEPT

Answer

Significant error

Question

What is the specified number of significant figures or digits to which the number of interest is to be rounded?

Answer

All of the above

Question

In financial systems ____ is the number of decimal places.

Answer

Precision

Question

The ____ of a number is an indication of the number of digits that have been used to express it.

Answer

Precision

Question

Round 1.4123519 to 5 significant figures

Answer

1.4124

Question

Round 6.32431925 to 3 significant figures

Answer

6.32

Question

Round 6.32431925 to 5 significant figures

Answer

6.3243

Question

Discard all digits to the right of the nth digit' is a rules for _____

Answer

Rounding off a numbers.

Question

The process of reducing a number of digits by which a number is represented os called

---

Answer

Rounding off

Question

In the case where there is no decimal point, the rightmost non-zero digit is the list ___ digit

---

Answer

Significant

Question

The leftmost non-zero digit is the most ___ digit

Answer

Significant

Question

An example of an irrational number is

Answer

square root of two

Question

Numbers that are not fully specified by the digits representing them are called ____.

Answer

Approximate numbers

Question

Numbers that are fully represented by some digits are called……..

Answer

Exact numbers

Question

For the sake of numerical computation, all numbers can be classified under…….broad headings

---

Answer

2

Question

The study of errors is very important in all areas of……..

Answer

All of the above

Question

percentage error can be obtaibed by which of the following

Answer

actual-measure/actual

Question

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PHY312

Question

The following is an example of a periodic function

Answer

All of the above

Question

100 is to be divided into two parts such that their product is maximum. The parts will be

---

Answer

(50, 50)

Question

If the chance of a bad reaction from a certain medicine is 0.001, determine the chance that out of 20000 men more than 3 will be affected badly by the medicine

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Answer

0.14

Question

An ordinary die numbered 1 through 6 is thrown. What is the probability that the number which turns up is less than 4?

Answer

\frac {1}{2}\

Question

A partial differential equation has

Answer

Two or more independent variables

Question

The magnitude spectrum of a Fourier transform of a real-valued time signal has _____symmetry.

Answer

even

Question

Flow in which each particle of fluid follows an irregular path is called ___

Answer

Turbulent flow

Question

Region of flow trailing a body where effect of that body is felt on velocity field is called ___.

Answer

Wake

Question

Boundary condition which include direct boundary value is ___.

Answer

Dirichlet boundary condition

Question

For partial differential equation, if \b^{2} - 4ac = 0\ , then equation is called ____.

Answer

parabolic

Question

What is the disadvantage of exponential Fourier series?

Answer

cannot be easily visualized as sinusoids

Question

Which of the following is an “even” function of t?

Answer

\t^2\

Question

A function f(x) defined on the interval [a,b] is said to be an even function if

---

Answer

f(-x) = f(x)

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Answer

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Question

The order of a Partial Differential Equation is the ____ order partial derivative or derivatives which appear in the equation

---

Answer

Highest

Question

A partial differential equation requires

Answer

two or more independent variables

Question

A half-range Fourier series for a function f (x) is a series consisting of the ____ terms only

---

Answer

sine and cosine

Question

How does Fourier series make it easier to represent periodic signals?

Answer

All the options

Question

The solution of a differential equation which is not obtained from the general solution is known as ___ solution.

Answer

singular

Question

An equation involving one or more independent variables is called ___ equation.

Answer

Partial differential

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Question

Region of flow trailing a body where effect of that body is felt on velocity field is called ___.

Answer

Wake

Question

Boundary condition which include direct boundary value is ___.

Answer

Dirichlet boundary condition

Question

For partial differential equation, if \b^{2} - 4ac = 0\ , then equation is called ____.

Answer

parabolic

Question

What is the disadvantage of exponential Fourier series?

Answer

cannot be easily visualized as sinusoids

Question

Which of the following is an “even” function of t?

Answer

\t^2\

Question

A function f(x) defined on the interval [a,b] is said to be an even function if

---

Answer

f(-x) = f(x)

Question

Region of flow trailing a body where effect of that body is felt on velocity field is called

---

Answer

Wake

Question

The order of a Partial Differential Equation is the ____ order partial derivative or derivatives which appear in the equation

---

Answer

Highest

Question

A partial differential equation requires

Answer

two or more independent variables

Question

A half-range Fourier series for a function f (x) is a series consisting of the ____ terms only

---

Answer

sine and cosine

Question

How does Fourier series make it easier to represent periodic signals?

Answer

All the options

Question

The solution of a differential equation which is not obtained from the general solution is known as ___ solution.

Answer

singular

Question

An equation involving one or more independent variables is called ___ equation.

Answer

Partial differential

PHY306

Question

Reflection by a material of lower refractive index than the medium in which the rays are travelling causes

---

Answer

No phase change

Question

Fresnel in his experiment shows ----- without the diffracted beams through the two slits.

Answer

the interference effect

Question

In Fraunhofer diffraction, the source of light and the observation screen are

Answer

infinite distance with the obstacle

Question

Michelson Interferometer is a device used to obtain

Answer

Interference fringes of various shapes

Question

Two sources are said to be coherent if they emit light waves with

Answer

Constant phase difference

Question

The red and violet fringes will be of the same width if

Answer

λ/d = constant

Question

A system of white and dark fringes, without any colours, obtained by white light are

Answer

achromatic fringes

Question

The spacing between any two consecutive bright and dark fringes is called

---

Answer

fringe-width

Question

A particle performing simple harmonic motion possesses both

Answer

potential and kinetic energy

Question

When light is reflected on a surface, the reflection is accompanied by a phase change of

---

Answer

180°

Question

When a red rose flower is observed in blue light, what colour does the observer see?

Answer

black

Question

A light wave has a wavelength of 500nm in air. The frequency of the wave is

---

Answer

6.0 x1014Hz

Question

The combination of waves with different frequencies is known as

---

Answer

superposition

Question

The equation of wave travelling along the positive x-direction is given by y= 0.2sin (500t-20x).The amplitude and angular frequency of the wave are respectively given by

---

Answer

0.2cm, 500rad/s

Question

The wavelength of signal from radio transmitter is 1500m and the frequency is 200 KHz.. What is the velocity of the propagation?

Answer

3x108 m/s

Question

In microscope, the eyepiece lens merely acts as

Answer

a magnifier

Question

Interference in thin films results from

Answer

splitting of amplitude

Question

Coherent sources are sources of light which emit light of

Answer

same frequency

Question

Interference phenomenom occurs due to

Answer

overlapping waves form coherent sources

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PHY310

Question

Switched mode operation

Answer

Reduces energy loses and increases efficiency

Question

The frequency range of an offline swtched mode power supply is

---

Answer

Between 50KHz to 500KHz

Question

Output current flow depends on the following except

Answer

None of the above

Question

Switching regulattors are adventageous ove linear regulators due to their

Answer

All of the above

Question

Which of these is correct about transistors

Answer

All of the above

Question

All linear regulators require an input voltage which is

Answer

Higher than the required output voltage

Question

Electrical energy is stored in

Answer

Insulators

Question

Electrical energy can be generated through

Answer

All of the above

Question

Whichof the statement is not correct about alternating current.

Answer

It travels in one direction out of a source

Question

When an electric charge exists within an object

Answer

The negatively charged electricity pulls the object towards the field

Question

When an electric change exists within an object

Answer

The positively charged electricity pushes the objject away

Question

Electrical energy can be stored using

Answer

All of the above

Question

Which of the statement is not correct about class AB amplifier?

Answer

They are more efficient than class B

Question

In more efficient amplifiers there is

Answer

All of the above

Question

Which of the following is not correct about class Camplifier

Answer

None of the above

Question

The class of amplifier that has tuned mode and untuned mode of operation is

---

Answer

Class c amplifier

Question

Which of the following statement is applicable to class B amplifiers

---

Answer

All of the above

Question

Which of the following is correct about class A amplifiers

Answer

All of the above

Question

The most distortion free amplifier class is

Answer

Class A

Question

The class of amplifier that has the highest incarity is

Answer

Class A

Question

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Class A

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Answer

Class A

PHY391

Question

In an atempt to verify the maximum power transfer theorem,the graph of the out put voltage against load resistance will give

---

Answer

A straight line graph

Question

In an atempt to verify the maximum power transfer theorem, if the output voltage is 10 V and the load resistance is 100 ohms, what is the power transfer

---

Answer

1 W

Question

In an atempt to verify the maximum power transfer theorem, the following components are needed except

---

Answer

Transistore

Question

Which of the following precaution must be taken before using an Ammeter

---

Answer

I ensure that it has 0A raeding

Question

Which of the following precaution must be taken before using a resistor

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Answer

I make sure that their values are known by measuring them with a multimeter.

Question

Which of the following precaution must be taken before using a power supply

---

Answer

Ensure that you are getting the necessary voltage range by measuring with the multimeter

Question

Any two terminal linear network containing energy sources and impedances can be replaced with an equivalent circuit consisting of a voltage source E' in series with an impedance R'. The value of E' is the open circuit voltage between the terminals of

the network and R' is the impedance measured between the terminals with all energy sources eliminated (but not their impedances). The statement above is for which of the following theorem?

Answer

Thevenin theorem

Question

If an emf E is placed in one branch of an electrical circuit, giving rise to a current I in another branch, the same current I is obtained in the original branch when the emf E is transferred to the branch where the current I arose. The statement above is for which of the following theorem?

Answer

Reciprocity Theorem:

Question

The Statement ''Each emf in a linear network produces current in any given branch Independent of the action of other emf s, and that the resultant total current in any branch is the algebraic sum of the contribution of current due to each of the emfs'' is for which of the following theorem?

Answer

Superposition theorem

Question

A terminal common to two or more branches is known as

Answer

Node

Question

A specific path between two points in a network is called

Answer

Branch

Question

A linear element is one

Answer

which the current is proportional to the voltage

Question

A network containing generators or energy sources along with other elements is known as

---

Answer

Active Network

Question

A network containing circuit elements without any energy source can be described as

---

Answer

Passive Network

Question

Which of the following statement best descibe an electrical network?

Answer

The interconnection of electric circuit elements such as inductors,resistors, capacitors and generators

Question

Which of the following is not correct about an example of an active device?

Answer

Voltage

Question

Which of the following is not correct about the example of passive a element?

Answer

Vacuum tube

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PHY361

Question

Waves which are responsible for back and forth movement of earth are called

---

Answer

p wave

Question

Richter scale meter was made in

Answer

1930

Question

Seismic waves which travel through interior part of earth are known as

---

Answer

body waves

Question

Strength of earthquake is measured by help of

Answer

Richter scale

Question

In homogeneous anisotropic medium, the physical property varies

---

Answer

with direction but not with position

Question

which of the following is not an inverse square law?

Answer

Hooke’s law

Question

The hardest substance available on the earth is

Answer

Diamond

Question

The type of wave that arrives first at a station from an earthquake hypocenter is

---

Answer

P-wave

Question

Assuming the earth to be a perfect sphere, its equatorial velocity is approximately

---

Answer

1600 to 1700km/hr

Question

Amongst the following, which one will have the highest P-wave velocity?

Answer

Diamond

Question

The acceleration due to gravity , ‘g’ is maximum at

Answer

Poles

Question

The most abundant mineral in the Earth’ crust is

Answer

quartz

Question

Acoustic impedance is the _____ of the density and velocity

Answer

Product

Question

Which one of the following is diamagnetic mineral

Answer

Calcite

Question

Which one of the following mineral constituents exhibits strong absorption in the UV-blue band of the EM spectrum due to charge transfer effect leading to coloration?

Answer

Fe-O

Question

which physical property of the medium governs the response of Ground Penetrating Radar (GPR0)?

Answer

Electrical permeability

Question

In a remotely sensed data of a planet, the presence of hydrous species can be inferred using ……. region of the electromagnetic spectrum?

Answer

Infrared

Question

Which one of the following can be best explored using electromagnetic method?

Answer

Massive sulphide deposit

Question

The most sensitive instrument for magnetic survey is

Answer

Optically pumped magnetometer

Question

Bouger correction is applied to correct for the gravity anomaly due to mass between station location and

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PHY313

Question

A mapping that preserves angles between oriented curves both in magnitude and in sense is called a/an _____ mapping.

Answer

conformal

Question

A continuos curve which does not have a point of self intersection is called ____.

Answer

Simple curve

Question

The residue theorem in complex analysis evaluate line integrals of analytical functions over

Answer

close curves

Question

The residue of f(z) = cot z at each poles is ___.

Answer

one

Question

Polar form of a complex number is

Answer

r(cosQ + lcosQ)

Question

A region which is not simply connected is called ____ region

Answer

connected curve

Question

If the principal part contains an infinite number of non- zero terms of (z-a), then z = a is also known as ____

Answer

Essential singularity

Question

A region which is not simply connected is called _____ region

Answer

multi-connected

Question

Simple curve are also called ____.

Answer

Jordan curve

Question

Under the transformation w = 1/z, the image line y = 1/4 in z-plane is

Answer

u^2 + v^2 + 4v = 0

Question

The point coincide with their transformation are known as ____.

Answer

fixed point

Question

There exist no analytical function f such that

Answer

Re f(z) = y^2 - 2x

Question

f (z) = e^z s analytic

Answer

everywhere

Question

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Non-singular point

Question

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A function v called a conjugate harmonic function for a harmonic function u in whenever ____.

Answer

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Question

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PHY311

Question

The number of sample points in a sample space is called--------

Answer

cardinality

Question

A description of a system that specifies the propertiesof each individual particle is called---.

Answer

Microstate

Question

A ---------- is a selection of n distinct objects without regard to order.

Answer

Combination

Question

The number of ways of choosing two objects from a set of seven is-------

Answer

21

Question

What is the probability of having atleast one tail when two unbiased coins are tossed

Answer

3/4

Question

If n unbiased coins are tossed, what is the sample space?

Answer

2n

Question

At room temperature, -------- degree of freedom contribute to mean energy

Answer

A or B

Question

Each of the element or individual outcome of an experinment is called-------

Answer

sample point

Question

Liquid He undergoes a phase transition at ----------

Answer

2.18K

Question

When a body is heated, it emits---------- waves from its surface

---

Answer

Electromagnetic

Question

Examples of Fermi-Dirac systems are---------

Answer

All of the above

Question

The electronic contribution to the heat capacity of a metal dominates at---------

---

Answer

Low temperatures

Question

A-------- degree of freedom is one of which the energy depends on the square of some property

---

Answer

quadratic

Question

The concepts of statistical mechanics include----------

Answer

All of the above

Question

Electronic heat capacity varies linearly with----.

Answer

Temperature

Question

Boltzmann distribution does not take into account the---------- properties of an electron gas

Answer

quantum mechanical

Question

Fermi-Dirac statistics are used to calculate the ----------of states.

Answer

Occupancy

Question

Equipartition contributions from vibrational degrees of freedom need only usually be considered at

---

Answer

very high temperatures

Question

If there are no sample points common to two events, the these events are said to be-----

---

Answer

Disjoint

Question

The entropy behaviuor of a Fermi-Dirac system is consistent with--------- of thermodynamics

---

Answer

The third law

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PHY309

Question

When an electron falls from an orbit where n = 2 to n = 1:

Answer

A photon is emitted

Question

Which of the following statement(s) can be associated with Bohr’s theory of the atom? I. An electron orbiting the nucleus can change its energy continuously. II. An electron orbiting the nucleus emits energy and falls into the nucleus. III. An electron orbits the nucleus without radiating energy and can change its energy only by a specific, quantized amount, when it moves between the orbits. IV. Electrons can only orbit the nucleus in specific circular orbits with fixed angular momentum and energy.

Answer

III and IV

Question

In Rutherford’s Gold Foil experiment, most of the alpha particles passed through the foil undeflected

---

Answer

The size of the nucleus is much less than the size of the atom

Question

Rutherford’s Gold Foil experiment caused a modification of which of the following?

Answer

Plum-pudding model of the atom

Question

The maximum kinetic energy of photoelectrons depends on which of the following? I. The light intensity II. The frequency of the light III. The material of the photoelectric cell

---

Answer

Only II and III

Question

The kinetic energy of photoelectrons depends on the:

Answer

photon frequency

Question

The photoelectric effect was explained by Albert Einstein by assuming that:

Answer

light is a particle

Question

How does the momentum of a photon change if the wavelength is halved?

Answer

Doubles

Question

How does the energy of a photon change if the wavelength is doubled?

Answer

Is cut to one-half

Question

The energy of a photon depends on its:

Answer

Frequency

Question

Which of the following photons has the greatest energy?

Answer

Gamma ray

Question

What did Max Planck propose to solve the black body radiator problem?

Answer

Light comes in packets of energy

Question

Classical physics could not explain the behavior of a black body radiator at very short wavelengths

---

Answer

Ultraviolet Explosion

Question

Which of the following colors is associated with the lowest temperature of a black body radiator?

Answer

Red

Question

Which of the following are emitted by the nucleus during radioactive decay?

Answer

All of the above

Question

The spontaneous decay of nuclei is called:

Answer

Radiation

Question

X-rays are created when:

Answer

electrons strike a metal target

Question

The charge on an electron is represented by “e.” Which of the following charges can exist?

Answer

2.0 e

Question

The electron charge was measured for the first time in the:

Answer

Oil drop experiment

Question

A Crooke’s Tube (a tube containing rarefied gas through which a current is passed between a cathode and an anode) was used in the discovery of the electron by:

Answer

J. J. Thomson

Question

When an electron falls from an orbit where n = 2 to n = 1:

Answer

A photon is emitted

Question

Which of the following statement(s) can be associated with Bohr’s theory of the atom? I. An electron orbiting the nucleus can change its energy continuously. II. An electron orbiting the nucleus emits energy and falls into the nucleus. III. An electron orbits the nucleus without radiating energy and can change its energy only by a specific, quantized amount, when it moves between the orbits. IV. Electrons can only orbit the nucleus in specific circular orbits with fixed angular momentum and energy.

Answer

III and IV

Question

In Rutherford’s Gold Foil experiment, most of the alpha particles passed through the foil undeflected

---

Answer

The size of the nucleus is much less than the size of the atom

Question

Rutherford’s Gold Foil experiment caused a modification of which of the following?

Answer

Plum-pudding model of the atom

Question

The maximum kinetic energy of photoelectrons depends on which of the following? I. The light intensity II. The frequency of the light III. The material of the photoelectric cell

Answer

Only II and III

Question

The kinetic energy of photoelectrons depends on the:

Answer

photon frequency

Question

The photoelectric effect was explained by Albert Einstein by assuming that:

Answer

light is a particle

Question

How does the momentum of a photon change if the wavelength is halved?

Answer

Doubles

Question

How does the energy of a photon change if the wavelength is doubled?

Answer

Is cut to one-half

Question

The energy of a photon depends on its:

Answer

Frequency

Question

Which of the following photons has the greatest energy?

Answer

Gamma ray

Question

What did Max Planck propose to solve the black body radiator problem?

Answer

Light comes in packets of energy

Question

Classical physics could not explain the behavior of a black body radiator at very short wavelengths

---

Answer

Ultraviolet Explosion

Question

Which of the following colors is associated with the lowest temperature of a black body radiator?

Answer

Red

Question

Which of the following are emitted by the nucleus during radioactive decay?

Answer

All of the above

Question

The spontaneous decay of nuclei is called:

Answer

Radiation

Question

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Answer

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PHY307

Question

The negative ratio between the lateral strain and the direct tensile strain is known as _____

Answer

Poisson’s ratio

Question

If the material recovers the original dimensions, when an external load is removed, this deformation is known as _____ deformation.

Answer

elastic

Question

In the powder method of XRD, the intensities of various bright lines are compared to determine the crystal structure. For simple cubic lattice the ratio of intensities at first two maxima are:

Answer

1⁄2

Question

In Bragg’s equation [nλ = 2.d.sinθ], θ is the angle between:

Answer

parallel lattice surfaces d distance apart and incident rays

Question

Laue’s model pictures XRD as reflection from parallel crystalline planes. Reflection is different from refraction as:

Answer

all of the mentioned

Question

Minimum interplanar spacing required for Bragg’s diffraction is:

Answer

\(\lambda /2\)

Question

The Miller indices h, k, and l of parallel planes in a BCC lattice should satisfy which of the following X-ray diffraction reflection rules?

Answer

h + k + l should be even

Question

X-ray diffraction patterns are used for studying crystal structure of solids because

---

Answer

Their wavelengths are comparable to inter-atomic distances

Question

X-rays have larger wavelengths than which of the following?

Answer

Gamma rays

Question

Which of the following is not a property of metal glass?

Answer

Transparent

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Question

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Answer

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Question

The smallest portion of a crystal which when repeated in different directions generates the entire crystal is called:

Answer

Unit cell

Question

Which of the following is a crystalline solid?

Answer

Copper wire

Question

Which of the following is a property of amorphous solids?

Answer

Isotropy

Question

An octahedral void is surrounded by:

Answer

6 atoms

Question

HCP and BCC are called close-packed structures. Close packed structures have:

Answer

Highest packing efficiency

Question

Packing efficiency of a crystal structure is the ratio of:

Answer

Volume occupied by particles to the total volume of the

Question

Co-ordination number of a crystalline solid is:

Answer

Number of nearest neighbours of a particle

Question

Allotropes differ in which of the following properties:

Answer

Crystal Structure

Question

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Crystal Structure

PHY303

Question

The length of the object measured in the frame of reference relative to which it is at rest is called

---

Answer

proper lenght

Question

Simultaneity has only absolute meaning and not relaive meaning

---

Answer

false

Question

A point on the locus to form space time continuum is called ----

---

Answer

event

Question

Simultaneity is

Answer

relative

Question

Calculate the oercentage contraction of a rod moving with a velocity 0.8c in a direction inclined at 600 to its own lenght

---

Answer

9 per cent

Question

You are in a windowless spacecraft. You need to determine whether your spaceship is moving at constant nonzero velocity, or is at rest, in an inertial frame of Earth.

Answer

You cannot succeed no matter what you do.

Question

A mass–spring system oscillates up and down with a period T when stationary in the inertial frame of an Earthbound observer. The same system is then moved past the Earthbound observer, with a velocity which in the observer’s frame is constant and of magnitude 0.50c. The observer now determines the period to be

Answer

1.2T

Question

There are about 2.81 x 109 heartbeats in an average lifetime of 72 years. Space travellers who are born and die on a spaceship moving at a constant speed of 0.600c can expect their hearts to beat a total of

Answer

(0.800)(2.81 x 109) times

Question

The distance from the origin to the point in space time is called

Answer

interval

Question

A pont in the space time is reffered to as ----

Answer

world point

Question

An event in sapce-time I completely specifed by a vector in a four-dimensional space with coordinates(x,y,z,t). This type of vector is called ----

---

Answer

four-vector

Question

Amount by which measured time interval is greater than corresponding proper time interval is called

---

Answer

time dilation

Question

Lorentz transformation equation hold for

Answer

all velocities: realtivistic & non-relativistic

Question

The faster a space ship is flying, the shorter it will appear to people on board the ship

---

Answer

it is false

Question

The faster an object is moving in relation to an observer, the ---- it will appear to an observer

---

Answer

shorter

Question

If the mass of an object changes, what will also change

Answer

energy

Question

The basic process involved in the measurement of time is the meassurement of ---

---

Answer

simultaneity

Question

The laws that govern the behaviour of mechanical systems will always have the same form in all inertial frames of reference

---

Answer

true

Question

Frame of refernce which are in translational motion at constant velocity relative to each other are called

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Every physical event occurs somewhere in space in a definite ----

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time interval

MTH315

Question

Every object continues in a state of rest in a straight line unless acted upon by a _____.

Answer

Force

Question

Simple harmonic motion is caused by forces whose magnitude varies with _____.

Answer

distance

Question

The total work done in moving a particle around any closed path is _____.

Answer

zero

Question

Any motion resulting from the _____ force is called an impulsive motion.

Answer

impulsive

Question

_____ constraint is a constraint condition which is explicitly dependent on time.

Answer

Rheonomous

Question

_____ constraint condition occurs when the constraint is independent of time.

Answer

Scleronomous

Question

_____ constraint means that the position vector of the particle is not considered along the time taken.

Answer

non-holomonic

Question

If the position vector of the particle is considered along the time-taken is known as _____ constraint.

Answer

Holomonic

Question

The limitation to the motion of a particle is called a_____.

Answer

constraint

Question

If the resultant external force acting on a system of particles is _____, then the total momentum remains _____.

Answer

0

Question

Two particles connected by a rigid rod moving freely in a plane has ____ degrees of freedom.

Answer

3

Question

Seven particles moving freely in a space has _____ number of degree of freedom.

Answer

21

Question

Six particles moving freely in a plane has _____ number of degrees of freedom.

Answer

12

Question

A particle moving on a given space curve has ____ number of degree of freedom.

Answer

no

Question

A system consisting of N particles moving freely in a space requires ____ co-ordinates to specify its position. Given that its number of degree of freedom is 3N.

Answer

3N

Question

___ co-ordinates are required to specify the position of a rigid body which can move freely in space with 6 degree of freedom.

Answer

6

Question

If a particle moves freely in a space with 3 coordinates. Thus, the number of degree of freedom is ____.

Answer

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Question

The number of co-ordinates required to specify the position of a system of one or more particles is called the number of _____ of the system.

Answer

degree of freedom

Question

A ____ system can be considered as a discrete system consisting of a large but finite number of particles.

Answer

Continuous

Question

A ____ system having a very large but finite number of particles can be considered as a continuous system.

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Discrete

Question

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MTH382

Question

Solve the initial value problen \(y^{''}-2y^{'}+y=0; y(1)=y^{'}(1)=0\)

Answer

$y(0)=0$

Question

Solve the initial value problen $y^{''}+3y^{'}=0; y(0)=3, y^{'}(0)=6$

Answer

$y=5-2e^{-3x}$

Question

Solve the differential equation $y^{''}-3y^{'}+2y=0$

Answer

$y(x)=c_{1}e^{x}+c_{2}e^{2x}$

Question

Use the result in question (4) to evaluate $\beta (4,3)$

Answer

$\frac{1}{60}$

Question

Use the Gamma function to evaluate $\int_{0}^{1}x^{4}(1-x)^{3} dx$

Answer

$\frac{1}{10}$

Question

Evaluate $\frac{\Gamma(3)\Gamma(\frac{5}{2})}{\Gamma(5.5)}$

Answer

$\frac{7}{10}$

Question

The Beta function of (m,n) is defined as

Answer

$\int_{0}^{1} x^{m-1}(1-x)^{n-1} dx$

Question

Evaluate $\Gamma (-\frac{3}{2}$

Answer

$\frac{4}{3}\pi$

Question

Evaluate $\Gamma (5)$

Answer

Question

The gamma function is defined by $\Gamma (x)=\int_{0}^{\infty} t^{x-1} e^{-t} dt$, evaluate $\Gamma (x+1)$

Answer

$x\Gamma(x)$

Question

If a and b are non-collinear vectors and $A=(x+y)a+(2x+y+1)b$

Answer

x=2,y=1

Question

The following forces act on a particle P:$F_{1}=2i+3j-5k$, $F_{2}=-5i+j+3k$,$F_{3}=i-2j+4k$,$F_{4}=4i-3j-2k$, Find the magnitude of the resultant

---

Answer

$2i-j$

Question

Given the scalar defined by $\phi(x,y,z)=3x^{2}z-xy^{2}+5$,find ϕ at the points (-1,-2,-3)

Answer

19

Question

Find a unit vector parallel to the resultant vector $A_{1}=2i+4j-5k$,$A_{2}=1+2j+3k$

Answer

$\frac{3}{7}i+\frac{6}{7}j-\frac{2}{7}k$

Question

If $A_{1}=3i-j-4k$, $A_{2}=-2i+4j-3k$,$A_{3}=i+2j-k$, find $\left|3A_{1}-2A_{3}+4A_{3}\right|$

Answer

$\sqrt (398)$

Question

A car travels 3km due north, then 5km northeast. Determine the resultant displacement

---

Answer

7.43

Question

Let a and b be vectors, then $a \times b= ab\sin \theta$ is the _____

Answer

vector

Question

Given that $A_{1}=2i-j+k$,$A_{2}=i+3j-2k$,$A_{3}=3i+2j+5k$ and $A_{4}=3i+2j+5k$,Find scalars a, b, c such that $A_{4}=a A_{1} +b A_{2}+c A_{3}$

Answer

a=-2,b=1,c=-3

Question

Given that $A_{1}=3i-2j+k$,$A_{2}=2i-4j-3k$,$A_{3}=-i+2j+2k$, find the magnitudes of $2A_{1}-3 A_{2}-5 A_{3}$

Answer

$\sqrt 30$

Question

Find the magnitude of vector $A=3i-2j+2k$

Answer

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Question

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Answer

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Question

Evaluate $\Gamma (5)$

Answer

24

Question

LOOK FOR THE QUESTION WHICH THE ANSWER HERE IS AND CHOOSE.

Answer

\(x\Gamma(x)\)

MTH312

Question

The composition of homomorphism is a

Answer

homomorphism

Question

if f:R_{1}\rightarrow R_{2} is a homomorphism if

Answer

the image of a sum is the sum of the images, and the image of a product is the product of the image

Question

if R is a ring with identity and I=R, find R/I

Answer

$\overline{0}$

Question

Let be$ R= Z_{8}$ and I = \left \{\overline{0},\overline{4} \right \} is an ideal of R, then

---

Answer

I=4R

Question

let \(\), be the ideal and n=1, then the ideal is called

Answer

the principal ideal

Question

Let be$ R= Z_{8}$ and I = \left \{\overline{0},\overline{4} \right \} is an ideal of R, find the element R/I

Answer

4

Question

An element a of a ring R is called nilpotent if there exists a positive number such that

---

Answer

$a^n=0$

Question

Let R be a ring, the set of nilpotent element of R is an ideal of R and this ideal is called the

---

Answer

nil radical of R

Question

Given that H is a sbgroup of a group G, fro any two elements Hx and Hy in G/H, which of the following is true?

Answer

(Hx) (Hy) = Hxy = Hyx since G is abelian= (Hy) (Hx), G/H is abelian

Question

The identity of the ring Z X Z is

Answer

(1,1)

Question

A ring (R, +,.) is a commutative ring with unity

Answer

if it is a commutative ring and has the multiplicative identity element

Question

Ring (R, +,.) is a ring with identity, if R has an identity element with respect to

---

Answer

Multiplication

Question

A set {0} is a ring with respect to the usual addition and multiplication called

---

Answer

trivial ring

Question

If a and b are integers, then

Answer

a is congruent to b modulo n if a-b is divisible by n

Question

Other (Z24) = 24, then Z_{24}

Answer

a Sylow 2-subgroup and a Sylow 3-subgoup

Question

Every group of order 20 has a

Answer

proper normal non-trivial subgroup

Question

Find the Sylow 5-subgroups of group G of order 255

Answer

1 or 51

Question

Let H and K be normal subgroups of a group G, G is called the internal direct product of H and K if

---

Answer

$G = HK and H\cap K=\left \{e}{ \right \}$

Question

The possible disjoint products of two transpositions on A_{4} are

---

Answer

(1 2) (3 4), (1 3) (4 2), (1 4) (2 3)

Question

Find the order of A_{4}

Answer

12

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let \(\), be the ideal and n=1, then the ideal is called

Answer

the principal ideal

Question

Let be$ R= Z_{8}$ and I = \left \{\overline{0},\overline{4} \right \} is an ideal of R, find the element R/I

Answer

4

Question

An element a of a ring R is called nilpotent if there exists a positive number such that

---

Answer

$a^n=0$

Question

Let R be a ring, the set of nilpotent element of R is an ideal of R and this ideal is called the

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Answer

nil radical of R

Question

Given that H is a sbgroup of a group G, fro any two elements Hx and Hy in G/H, which of the following is true?

Answer

(Hx) (Hy) = Hxy = Hyx since G is abelian= (Hy) (Hx), G/H is abelian

Question

The identity of the ring Z X Z is

Answer

(1,1)

Question

A ring (R, +,.) is a commutative ring with unity

Answer

if it is a commutative ring and has the multiplicative identity element

Question

Ring (R, +,.) is a ring with identity, if R has an identity element with respect to

---

Answer

Multiplication

Question

A set {0} is a ring with respect to the usual addition and multiplication called

---

Answer

trivial ring

Question

If a and b are integers, then

Answer

a is congruent to b modulo n if a-b is divisible by n

Question

Other (Z24) = 24, then Z_{24}

Answer

a Sylow 2-subgroup and a Sylow 3-subgoup

Question

Every group of order 20 has a

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proper normal non-trivial subgroup

Question

Find the Sylow 5-subgroups of group G of order 255

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1 or 51

Question

Let H and K be normal subgroups of a group G, G is called the internal direct product of H and K if

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$G = HK and H\cap K=\left \{e}{ \right \}$

Question

The possible disjoint products of two transpositions on A_{4} are

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Answer

(1 2) (3 4), (1 3) (4 2), (1 4) (2 3)

Question

Find the order of A_{4}

Answer

12

Question

The composition of homomorphism is a

Answer

homomorphism

Question

if $f:R_{1}\rightarrow R_{2}$ is a homomorphism if

Answer

the image of a sum is the sum of the images, and the image of a product is the product of the image

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if R is a ring with identity and I=R, find R/I

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MTH308

Question

When a population of cells divided synchronously, with each member producing a daughter cell, it is classified as

Answer

discrete model

Question

When the dependent variable assume a range of values characterized by discrete values of the independent variable it is called

Answer

discrete model

Question

The following come under the category of dynamic systems except

Answer

fluid flowing throw a rigid diverging tube

Question

In the ____ formulation, the equation describing the model involve derivatives of the dependent variable with respect to time

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Answer

dynamic

Question

Mathematically, Walrasian stability condition is given as \(\frac{dE(p)}{dt}=E'(P)=D'(P)-S'\)

Answer

less than zero

Question

Relationships involving variables that depends on time are called

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Answer

Dynamic

Question

When time does not play any part in the variable relationship in a system, it is called

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Answer

Static

Question

Most real life problems are amenable to simple mathematical treatment

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Answer

True

Question

The model for the radioactive decay is given as $\frac{d N}{dt}=\pm \lambda N$. This equation is linear if

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Answer

$\pm \lambda N$ is positive

Question

Modeling can be classified into ___ types

Answer

four

Question

When the resulting equations are either algebraic, differential of difference, being linear on non-linear, then such models are classified as

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Answer

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Question

The objective of describing the motion of the pendulum in the simple pendulum clock is an example of

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Answer

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Question

The objective of theoretical modeling is to apply the basic laws or ideas in small ways and to particular cases

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Answer

True

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The theory of gravitation by Sir Isaac Newton, Theory of Einstein, Planetary motion of Kepleir, are typical examples of

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Answer

empirical models

Question

Models which represent a fundamental characteristic of nature are called

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Answer

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Question

Models based on experimentally founded hypothesis are called

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Mathematical models are basically of two kinds

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empirical models and theoretical models

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Mathematical Modeling

MTH305

Question

Which of these is one of the cube roots $-11- 2i$

Answer

1+2i

Question

Find the square roots of $8+4\sqrt{5 i}$

Answer

$-\sqrt{10}-\sqrt{2i}, \sqrt{10}+\sqrt{2i}$

Question

Find the square roots of 5-12i

Answer

3+ 2i,-3+ 2i

Question

Express complex number $-2\sqrt {2}-2i$ in polar form

Answer

$4\cis 45^{0}$

Question

Express complex number $-2\sqrt {3}-2i$ in polar form

Answer

$4\cis 210^{0}$

Question

Suppose $z_{1}=3- 4i$ and $z_{2}= -4+ 3i$. Find $z_{1}\times z_{2}$

Answer

-7

Question

Suppose $z_{1}=3- 4i$ and $z_{2}= -4+ 3i$. Find $z_{1}\cdot z_{2}$

Answer

-24

Question

Find the 5th root of unity

Answer

$ e^{\frac{2k\pi i}{5}$

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Express the complex number -5+5i in polar form

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Question

Find real numbers x and y such that 3x +2iy- ix+5y= 7+5i.

Answer

x=-1,y=2

Question

Suppose\(z_{1}=2+i, z_{2}=3-2i\) then evaluate \(|3z_{1}-4z_{2} \)

Answer

\(\sqrt{157}\)

Question

Perform the operation\(\frac{3i^{30}-i^{19}}{-+2i}\)

Answer

1+i

Question

Perform the operation\(frac{3-2i}{-1+i}\)

Answer

\(\frac{-5}{2}-\frac{1}{2}i\)

Question

Evaluate $sinh^{-1}1.475$

Answer

1.1808

Question

If $\sin hz=\frac{1}{2} (e^{z}-e^{-z}\ )$, evaluate $\sinh 1.275$

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Simplify i^{12}

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MTH302

Question

A function \(y = g(x)\) is said to be even if

Answer

\(g(-x) = g(x) \)for all x

Question

One of these is an example of an even function

Answer

cos x

Question

If $A_{n}=\frac{n^2}{(2x+1)^2}$ find |($\frac{A_{n+1}}{A_{n}}$)

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$(\frac{(n+1)^2}{n^2(2x+1)}$)

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If the Ratio test gives $|x - x_{0}| > \frac{1}{L}$the series _____

Answer

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Obtaining the Taylor series of a function $f (x)$ about a point $x_0 $ the radius of convergence of the series is equal to the

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Answer

distance of the point x_0 from the nearest singularity

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Question

Expression of the form $A_{0} + A_{1}(x-x_0)+ \codots + A_{n}(x-x_0)^{n} + \ cdots + = \sum{n=0}^{\infty}A_{n}(x-x_0)^{n} + cdots$ is called

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power series

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The singular points of the differential equation: $P(x)\frac{d^2y}{dx^2}+Q(x)\ frac{dy}{dx}+R(x)y = 0$ where the functions P(x) , Q(x) and R(x)are polynomials having no common factors are the points for which for which

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Answer

$P(x)=0$

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Using change in index of summation, the series $\sum_{n = 2}^{\infty}n(n-1)a_{n}x^{n-2}$ is equivalent to

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$\sum_{n = 0}^{\infty}(n+2)(n+1)a_{n+2}x^{n}$

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Answer

$f(x) = \sum_{n = 0}^{\infty}\frac{f^{n}(x_0)}{n!}(x-x_0)^n$

Question

If the Ratio test gives $\rho =1 $ the test _____

Answer

fails

Question

The Taylor series of a function f with a radius of convergence $\rho > 0$ is said to be

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Answer

$analytic \;at \;\;x = x_0$

Question

An expression of the form $A_{0}+ A_{1}(x-x_{0})+A_{1}(x-x_{0})^{2}\cdots + A_n(x-x_0)^{n} +\dots \)

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If the Ratio test gives$\left|x - x_{0}\right| < \frac{1}{L}$the series _____

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Question

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Answer

\(P(x)=0\)

STT311

Question

_____ is a function of the observable random variables in a sample and know

---

Answer

Statistic

Question

Let \(Y\) be a random variable with mean 11 and variance 9. Using Tchebyshelff's theorem, find a lower bound for \(P(6<y<16)\)< p="" style="box-sizing: border-box;"></y<16)\)<>

Answer

0.64

Question

If two events, A and B, are such that P(A) = 0.5, P(B) = 0.3, and \(P(A\cap B)=0.1\) find \(P\left(\frac{A}{A\cup B}\right)\)

Answer

1

Question

If two events, A and B, are such that P(A) = 0.5, P(B) = 0.3, and $P(A\cap B)=0.1$ find $P\left(\frac{A\cap B}{A\cup B}\right)$

Answer

(1/7)

Question

The relative humidity, Y, when measured at a location, has a probability density function given by: $f(y)=ky^3(1-y)^2$ for $0\leq y \leq 1$ and $f(y)=0$ elsewhere , find the value of k that makes f(y) a density function

Answer

60

Question

Given that $X_{1}, X_{2},\cdots Xn$ are mutually independent and normally distributed with mean σ and variance σ where the density function is given as: $f(x)=\frac{1}{\sqrt{2\pi {\sigma}^2}}e^{-2\sigma^2(x-\mu)^2 }$, what is the maximum likehood estimator for the variance, σ^{2}

Answer

$\frac{1}{n}\sum_{i=1}^{n}(X_{i}-\overrightarrow{X})^2$

Question

Calculate the variance of Y for a continuous random variable XY which has the following joint density function: f(x,y) = x+y for 0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(35/72)

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Answer

(1/144)

Question

What is the expectation of \(XY\) if the continuous random variable XY has the following joint density function: \(f(x,y) = x+y\) for \(0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(1/3)

Question

Estimate the variance of a continuous random variable C with the following density function: \(f(c) = 1\) for \(0< c < 1 \) and \(f(c) =0\) elsewhere

Answer

(1/12)

Question

Compute the mean of a continuous random variable A with the following density function: \(f(a) = 1\) for \(0<a<="" p="" style="box-sizing: border-box;"></a

Answer

(1/2)

Question

The continuous type of random variable X has the following density function:\
(f(x)=a-x for 0<x<="" p="" style="box-sizing: border-box;"></x

Answer

(1/9)

Question

The Central Limit Theorem says that the sampling distribution of the sample mean is approximately normal if

Answer

the sample size is large

Question

Six men and five women apply for an executive position in a small company. Two of the applicants are selected (at random) for interviews. How many women do you expect to be in the interview pool?

Answer

(10/11)

Question

The probability that an alarm system will work when there is a danger in a construction site is 0.99, the probability of the alarm system will work if there is no danger is 0.02, and the probability of occurrence of any danger in this construction site is 0.03. What is the probability of a danger, given that the alarm system works?

Answer

0.60489

Question

Let $X\sim N(1,9)$ and $Y\sim N(2,16)\ $). Furthermore, X and Y are independent. For which value of v does it hold that $ (P(X+Y)\leq v)=0.975$?

Answer

-6.8

Question

Let X be a random variable such that $E[X] = \ln 2$. What can be deduced about e^{-x}

Answer

$E[e^{-x}]\geq 1/2$

Question

About the independent events A and B it is known that P(A|B) = 0.2 and P(B|A) = 0.5. compute $P(A\cup B)$

Answer

0.2

Question

You arrive at a bus stop at 10 o’clock, knowing that the bus will arrive at some time uniformly distributed between 10 and 10:30. What is the probability that you will have to wait longer than 10 minutes?

Answer

(2/3)

Question

The density function of X is given by $f(x)= a+bx^{2}$ when $0\leq x \leq 1$ and $f(x) = 0$ elsewhere. Given that $E(X) = 0.6$, find (a , b)

Answer

(3/5,6/5)

Question

_____ is a function of the observable random variables in a sample and know

---

Answer

Statistic

Question

Let \(Y\) be a random variable with mean 11 and variance 9. Using Tchebyshelff's theorem, find a lower bound for \(P(6<y<16)\)< p="" style="box-sizing: border-box;"></y<16)\)<>

Answer

0.64

Question

If two events, A and B, are such that P(A) = 0.5, P(B) = 0.3, and \(P(A\cap B)=0.1\) find \(P\left(\frac{A}{A\cup B}\right)\)

Answer

1

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Answer

(1/7)

Question

The relative humidity, Y, when measured at a location, has a probability density function given by: $f(y)=ky^3(1-y)^2$ for $0\leq y \leq 1$ and $f(y)=0$ elsewhere , find the value of k that makes f(y) a density function

---

Answer

60

Question

Given that $X_{1}, X_{2},\cdots Xn$ are mutually independent and normally distributed with mean σ and variance σ where the density function is given as: $f(x)=\frac{1}{\sqrt{2\pi {\sigma}^2}}e^{-2\sigma^2(x-\mu)^2 }$, what is the maximum likehood estimator for the variance, σ^{2}

Answer

$\frac{1}{n}\sum_{i=1}^{n}(X_{i}-\overrightarrow{X})^2$

Question

Calculate the variance of Y for a continuous random variable XY which has the following joint density function: f(x,y) = x+y for 0<x<y<="" p="" style="box-sizing: border-box;"></x

---

Answer

(35/72)

Question

Calculate the variance of X for a continuous random variable XY which has the following joint density function:$f(x,y) = x+y$ for $0<x<y<="" p="" style="box-sizing: border-box;"></x

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Answer

(1/144)

Question

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Answer

(3/5,6/5)

MTH309

Question

The objective of transportation problem is to transport various quantities of a ____ commodity that are stored at various origins to different destinations

---

Answer

single

Question

Transportation problem is one of the subclasses of _____

Answer

linear programming problems

Question

The RHS of the initial Simples tableau contains

Answer

RHS of the constraints

Question

To get all other row in the Simplex tableau we adopt one of the following schemes

Answer

New pivot row = (current row) – (its pivot column coefficient) X (new pivot row)

Question

Which of the following is the correct scheme for getting the new pivot row in the simplex algorithm

Answer

New pivot row = current pivot row/pivot element

Question

In the Simplex algorithm the variable that leaves the basis is the basic variable with

Answer

) smallest non negative ratio

Question

Variables added to the constraints in the maximization problem to make them equality are called

Answer

slack variable

Question

In the Simplex algorithm the variable that enters the basis is determined by using

Answer

optimality condition

Question

In ___ analysis we obtain additional information about the behavior of the optimum solution when the model undergoes changes

Answer

sensitivity

Question

To construct a dual variable of each primal problem we do the following except

Answer

reduce the number of iterations for the primal problem

Question

One of the disadvantages of graphical solution of LPP is

Answer

the decision variables cannot be more than two

Question

Which of the following statements is not true about LPP

Answer

the number of constraints must equal the number of decision variables

Question

The first step in the formulation of LPP is

Answer

formulate the objective function

Question

Which of the following statements is not true

Answer

OR techniques can solve all real life problems

Question

Which of these is true about linear programming problems

Answer

The objective function is linear

Question

There are ____ main types of LPP

Answer

2

Question

For the minimization problem in LPP the constraints are of ___ type

---

Answer

greater thanequal to

Question

Which of these techniques in Operation Research is best suitable for problems that need to be decomposed in smaller problems before solution

---

Answer

Dynamic Programming

Question

The difference between the minimization problem and the maximization problem is mainly in

Answer

type of constraint

Question

A linear programming problem is made up of

Answer

objective function, constraints and nonnegative restrictions

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MTH307

Question

The partial differential equation: \[L(u)=Au_(xx) + bu_(xy)+ Cu_(yy) - H(x,y,u,u_x,u_y)= 0 \] would have _____ roots, if \[B^2 - 4AC < 0\]

Answer

imaginary

Question

The partial differential equation: \[L(u)=Au_(xx) + bu_(xy)+ Cu_(yy) - H(x,y,u,u_x,u_y)= 0 \] would have _____ roots, if \[B^2 - 4AC = 0\]

Answer

real and coincidence

Question

$$(1-x^2)y'' - xy' + 2 y = 1; y(0) = 0 , y'(1) = 1$$ is a _____ problem

---

Answer

Boundary Value

Question

If A, B and C are functions of $$x,y,u,u_x,u_y$$ then the equation $$L(u)=Au_{(xx)} +bu_{(xy)}+ Cu_{(yy)} - H(x,y,u,u_x,u_y)= 0$$ is said to be

---

Answer

quasi-linear

Question

If A, B and C are functions of only independent variables x and y, then the equation $$L(u)=Au_{(xx)} + bu_{(xy)}+ Cu_{(yy)} - H(x,y,u,u_x,u_y)= 0$$ is said to be

---

Answer

semi-linear

Question

Ordinary differential equations can be classified into

Answer

2

Question

\[x^2y'' + 2xy' - y = 1; y(1) = 0 , y'(1) = 1\] is a _____ problem

---

Answer

Initial Value

Question

Trapezoidal rule can be derived by approximating a curve by a _____

Answer

straight line

Question

A differential equation involving ordinary derivatives (or total derivatives) with respect to a single independent variable is called _____ differential equation

---

Answer

ordinary

Question

_____ is the difference between the exact y(x) value and the approximated value P(x)

Answer

Error

Question

The method of finding area under a curve is known as _____

Answer

integration

Question

_____ integrals are best handled by analytical means

Answer

indefinite

Question

In 1945, _____ introduced the idea of approximation to functions by means of a series of polynomials over adjacent intervals with continuous derivatives at the end-points of the intervals

Answer

Schoenberg

Question

Numerical integration deals with only ____ integrals

Answer

definite

Question

The _____ formula is given by $$\int_{x_0}^{x_n} p(x) dx = \frac{3}{8}h(y_0+3y_1+3y_2+2y_3+3y_4+3y_5+2y_6+...+3y_{n-2}+3y_{n-1}+y_n)$$

Answer

three-eighth Simpson’s

Question

$$\int_{x_0}^{x_n} p(x) dx = \frac{1}{3}h(y_0 + 4y_1 + 2y_2 + 4y_3 + ... + 2y_{n-2} + 4y_{n-1} + y_n)$$ is the _____ rule

---

Answer

One-third Simpson’s

Question

$$p_k (x) = y_0 + k \Delta y_0 + \frac{k(k-1)}{2!} \Delta^2 y_0 + \frac{k(k-1)(k-2)}{3!} \Delta^3 y_0 + ...+ \frac{k(k-1)(k-2)...(k-n)}{n!} \Delta^n y_0 $$ describes the _____ formula

---

Answer

Newton Gregory

Question

$$\int_{x_0}^{x_n} p(x) dx = \frac{1}{2}h(y_0 + 2y_1 + 2y_2 + ... + 2y_{n-1} + y_n)$$ represents the _____ rule

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Answer

Trapezoidal

Question

The points within the limits of integration approximated by some numerical schemes are known as _____ points

---

Answer

collocating

Question

Numerical integration is commonly referred to as

Answer

Numerical quadrature

Question

The partial differential equation: \[L(u)=Au_(xx) + bu_(xy)+ Cu_(yy) - H(x,y,u,u_x,u_y)= 0 \] would have _____ roots, if \[B^2 - 4AC < 0\]

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Question

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Boundary Value

Question

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---

Answer

quasi-linear

Question

If A, B and C are functions of only independent variables x and y, then the equation $[L(u)=Au_(xx) + bu_(xy)+ Cu_(yy) - H(x,y,u,u_x,u_y)= 0]$is said to be

---

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Question

Ordinary differential equations can be classified into

Answer

2

Question

$x^2y'' + 2xy' - y = 1; y(1) = 0 , y'(1) = 1$ is a _____ problem

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Answer

Initial Value

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Answer

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$p_k (x) = y_0 + k \Delta y_0 + \frac{k(k-1)}{2!} \Delta^2 y_0 + \frac{k(k-1)(k-2)}{3!} \Delta^3 y_0 + ...+ \frac{k(k-1)(k-2)...(k-n)}{n!} \Delta^n y_0 $ describes the _____ formula

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Trapezoidal

Question

The points within the limits of integration approximated by some numerical schemes are known as _____ points

Answer

collocating

Question

Numerical integration is commonly referred to as

Answer

Numerical quadrature

MTH303

Question

Find the maximum magnitude of the direction from the point \((2,1,-1)\) for the directional derivative of \(\phi =x^{2}yz^{3}\)

Answer

\(4\sqrt{11}\)

Question

Find a unit normal to the surface $x^{2}y+2xz=4$ at the point $(2,-2,3)$

Answer

$-1i/3+2j/3 +2k/3$

Question

Find the area bounded by the hypocycloid $x^{\frac{2}{3}}+y^{\frac{2}{3}}=a^{\frac{2}{3}}$ with $a>0$

Answer

$\frac{3\pi a^{3}}{8}$

Question

Find the volume of a parallelepiped whose edges are $a=2i-3j+4k$, $b=i+2j-k$, $c=3i-j+2k$

Answer

2/3

Question

Find the area of a parallelogram with vector A and B as diagonals where $A=3i+j-2k$ and $B=i-3j+4k$

Answer

8.66

Question

A rigid body is rotating at 5 radians per second about an axis OM where M is the point 3i-4j+k relative to O. find the magnitude of the linear velocity of the particle of the body at the point 5i+2j+3k

---

Answer

26.08

Question

Find the curl F where+ $F=grad(x^{3}+y^{3}+z^{3}-3xyz$).

Answer

0

Question

Find the divergence of the curl of the vector field $V=(x^{2}-y^{2})i+2xyj+(y^{2}-xy)k$.

Answer

4x

Question

The coordinates of a moving particle are given by $x=4t-\frac{t^{2}}{2}$ and $x=3+6t-\frac{t^{3}}{6}$. Find the velocity of the particle when $t=2 sec$.

Answer

4.47

Question

A particle moves along the curve $r=(t^{3}-4t)i+(t^{2}+4t)j+(8t^{2}-3t^{3})k$, where t is the time. Find the acceletion of the particle at $t=2$

Answer

$12i+2j-20k$

Question

Determine the value of x so that $T = 2i + 3j + k$ and $S = 4i +xj - 2k$ are perpendicular

---

Answer

-2

Question

Which of the following is true of the projection of two vectors X and Y?

Answer

The projection of X on Y equal the scalar product of X.y where y is a unit vector in the direction of Y

Question

Which of the following is not a possibility, given that the scalar product of two vectors $r_{1} = a_{1}i- b_{2}j + c_{3}k$, $r_{2} = a_{1}i + b_{2}j – c_{3}k$, is zero

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Answer

They are parallel

Question

If $r_{1} = 2i- j + k$, $r_{2} = i + 3j - 2k$, $r_{3} = -2i+j-3k$ and $r_{4}= 3i+ 2j +5k$, find scalars x,y,z such that $r_{4} – xr_{1} = yr_{2 }+ zr_{3}$

Answer

$-2,1,-3$

Question

An automobile travels 10m northwest, then changing direction and travel 20m 30 degree north of east and finally travels 35m due south. What is the resultant displacement of the automobile?

Answer

20.5m, 60 degree south of East.

Question

Find f at the point (-2,3,5,-6) for a scalar field defined by $f(r,s,t,q)= 6rs-10qt - 50ln(qr)-log_{ts}1$

Answer

139.75

Question

Which of the following pair comprises both scalar and vector quantity in that order?

Answer

Specific heat, displacement

Question

Find the symmetric form of the equation of a straight line which passes through two given points X and Y having position vectors x and y with respect to an origin O.

Answer

r=mx+ny/(m+n)

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Given a vector X and scalars s and t, then the law of vector algebra which states that s(tX)=(st)X is called

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Question

Which of the following pair comprises both scalar and vector quantity in that order?

Answer

Specific heat, displacement

Question

Find the symmetric form of the equation of a straight line which passes through two given points X and Y having position vectors x and y with respect to an origin O.

Answer

r=mx+ny/(m+n)

Question

An aircraft travels 6km due south, then 10km in the direction 60 degree South of west. What is the resultant displacement

---

Answer

15.49Km

Question

Given a vector X and scalars s and t, then the law of vector algebra which states that s(tX)=(st)X is called

---

Answer

Associative Law for Multiplication

MTH381

Question

Solve $z^{2}-(5+i)z+8-i=0$

Answer

$\frac{5-24i}{4}$

Question

If $z_{1}=9-8i$ and $z_{1}=9-8i$

Answer

$1-2i$

Question

Find the work done by $F=x^{2}i-2yz+zk$ in moving an object along the line segment from(1,1,1) to (4,4,4)

Answer

$-\frac{27}{2}$

Question

Evaluate $\int_{K}xydx-y\sin(x) dy$, if K has coordinate function $x=t^{2}, y=t$ for $-\leq t\leq 2$

Answer

$\frac{66}{5}+\frac{1}{2}\left(cos(4)-cos(1)\right)$

Question

Evaluate$\int_{C}xyzdx-cos(yz)dy+xzdz$ along the straight line segment L to (1,1,1) to (-2,1,3)

Answer

$\frac{3}{2}$

Question

Transform a triple integral $I=\int\int\int dx\, dy\, dz$ in Cartesian coordinates to spherical coordinates by using these transforming equations $x=rsin\theta cos\phi$,$x=rsin\theta sin\phi$,$x=r cos\theta$.

Answer

$I=\int\int\int r^{2} sin\theta\, dr\, d\theta\, d\phi$

Question

Express $I=\int_{S}\int(x^{2}+y^{2})dxdy$ in terms of u and v, given that $u^{2}-v^{2}$ and y=2uv

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Answer

$I=4\int_{S}\int(u^{2}+v^{2})^{3}dudv$

Question

Express $I=\int_{R}\int xy^{2}\, dx\, dy$ in polar coordinates, making the substitutions $x=rcos\theta$,$y=sin\theta$.

Answer

$I=\int_{R}\int r^{3} sin_{2}\theta cos\theta\, rdr\, d\theta$

Question

Evaluate the surface integral $I=\int \int_{s} (x^{3}dydz+x^{2}ydzdx+x^{2}zdxdy)$

Answer

$\frac{5 \pi a^{4} b}{4}$

Question

Evaluate $\int_{C} xdx-yzdy+e^{x}dz$,if C is the curve with coordinate functions $x=t^{2}, y=-t,z=t^{2}$ for $1\leq t\leq 2$

Answer

$\frac{111}{4}+e^{4}-e$

Question

The line y=2x and the parabola $y^2=16x$ intersect at x=4. Find by a double integral, the area enclosed by$ y=2x$,$y^{2}=16x$ and the ordinate at$ x=1$ and the point of intersection at$ x=4$

Answer

3.67

Question

Evaluate $I=\int\int\int_{V}3\left(x^{2}+y^2{2}+z^{3}\right)dV$ by changing to polar coordinate

---

Answer

$4\frac{4}{5}a^{5}\pi$

Question

Find the volume of the sold bounded by the planes z=0,x=1,x=2,y=-1,y=1 and the surface $z=x^{2}+y^{2}$

Answer

$V=5\frac{1}{3}$units

Question

Evaluate $\int_{1}^{2} \int_{0}^{\pi}(3+\sin\theta)d\theta dr$

Answer

$3\pi+2$

Question

Determine the Jacobian of the functions $x = r \cos\theta$ and $y= r\sin\theta$

Answer

r

Question

Find the integral $\int_{0}^{\pi}\int_{0}^{\frac {\pi}{2}}\int_{0}^{r} x^{2}\sin\theta dx d\theta d\phi$

Answer

$\frac{\pi r}{2}$

Question

Evaluate the $\int_{0}^{2} dx\int_{1}^{3} dy \int_{1}^{2} xy^{2}z dz$

Answer

26

Question

Determine the integral $I=\int_{2}^{4}\int_{1}^{2}\int_{4} xy(z+2)dx dy dy \$

Answer

120

Question

$y_{1}=\sin(6x)$and $y_{2}=\cos(6x)$ are the solution of the homogeneous differential equation $y^{''}+36y=0$. Evaluate the Wronkian of the solutions

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Answer

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Answer

e^{4x}

MTH341

Question

Which of the following statements is true

Answer

Every differentiable function is continuous

Question

Let $f:[0,5]\rightarrow R$ defined by Let a function $f(x)=\left\{\begin{matrix} 2x+1, & 0\leq x\leq 3\\ x^2-2, &3\leq x\leq 5 \end{matrix}\right.$. obtain $f^{'}(3^{+})$

Answer

6

Question

Let $f:[0,5]\rightarrow R$ defined by Let a function $f(x)=\left\{\begin{matrix} 2x+1, & 0\leq x\leq 3\\ x^2-2, &3\leq x\leq 5 \end{matrix}\right.$. obtain $f^{'}(3^{-})$

Answer

2

Question

To find $\lim_{x\rightarrow c^+ }\frac{f(x)-f(c)}{x-c}$, we write x =

Answer

c+h

Question

If f is derivable at each point of]a,b[and also at the end points a and b, then f is said to be derivable on the

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Answer

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Question

Let the function f be defined on the closed interval [a,b]. Then f is derivable at the end point a if

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Answer

\(\lim_{x\rightarrow a^+ }\frac{f(x)-f(a)}{x-a}\)

Question

if \(f^{'}(c)\) denotes the derivative of f at x=c. \(f^{'}(c)\) exists iff I \(Lf^{'}(c)\) and \(Rf^{'}(c)\) exists II \(Lf^{'}(c)\) = \(Rf^{'}(c)\) III \(Lf^{'}(c)\) = \(|Rf^{'}c|\)

Answer

I and II

Question

Evaluate \lim_{x\rightarrow 0 }\frac{e^3x-1}{x}

Answer

3

Question

Evaluate \lim_{x\rightarrow \infty }\frac{logx}{x}

Answer

\(\infty\)

Question

The function \(f(x)=x^{2/3}\) on [-8,8] does not satisfy the conditions of the mean-value theorem because

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Answer

derivative of f at zero does not exist

Question

If c is the number defined by Rolles' theorem, then for \(f(x)=2x^3-6x\) on the interval \(0<="" p="" style="box-sizing: border-box;">

Answer

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Question

Suppose \(\lim_{x\rightarrow 0}\frac{g(x)-g(0)}{x}=1\). It follows necessarily that

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Answer

The derivative of g at 0 equal 1

Question

Let f be the function given by \(f(x)=|x|\). Which of the following statements about f are true? i f is continuous at x=0 ii f is differentiable at x=0 iii f has an absolute minimum at x=0

Answer

i and iii

Question

If \(\lim_{x\rightarrow 2}f(x)=7\), which of the following must be true? i f is continuous at x=3 ii f is differentiable at x = 3 iii f(3)=7

Answer

None

Question

At x=3, the function given by $f(x)=\left\{\begin{matrix} x^2, & x<3\\ 6x-9, & x\geq 3 \end{matrix}\right..$ is

Answer

Differentiable but not continuous

Question

Which of the following functions shows that the statement “ if a function is continuous at x=0" is false?

Answer

$f(x)=x^{1/3}$

Question

Let f be the function given by $f(x)=\frac{(x-1)(x^{2}-4)}{x^{2}-a}$. For what positive values of a is f continuous for all real numbers x?

Answer

None

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Question

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Answer

I and II

MTH311

Question

F is said to be a function from set A to a set B if

Answer

element x in A can be associated with a unique element in B

Question

Let $f(x)= -7x+5\;\;and\;\;g(x) =10x -12, \;\;find\;(f+g)(x)$

Answer

$3x-7$

Question

Examples of even function include these except

Answer

$y = tan\ x$

Question

A ratio of polynomials is called ……

Answer

rational function

Question

Find the derivative of $f(x)=x^4+\cos x^2 -\ln x e^x$

Answer

$4x^3-2x\sin x^2 -\frac{1}{x} e^x-\ln x e^x$

Question

Find f(-2) if $f(x)= -2x^3 +5x^2-4x$

Answer

44

Question

A function $f : A \rightarrow B$ is said to be a even function if for all $x\in A$

Answer

$f(x)= f(-x)$

Question

The function f is called a real-valued function of two variables if

---

Answer

there are two independent variables

Question

The following except one are trigonometric functions in x

Answer

log x

Question

Given that \(f:A\rightarrow B\), then set A is called

Answer

domain

Question

The difference between the total and partial derivatives is

Answer

the elimination of indirect dependencies between variables in partial derivatives

Question

The partial derivative of \(4x^3y - 5y^3\)with respect to x is

Answer

\(12x^2 y\)

Question

The derivative of cos x is

Answer

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Question

Find the first order partial derivative with respect to y of the function: $f(x,y)= x^4+6\sqrt y -10$

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Question

$\lim_{x}^{9}\frac{\sqrtx -3}{x-9}=\cdots$

Answer

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Find h(x-2) if $h(x)= -3x^2 +7x-5$

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Question

Functions whose domain and co-domain are subsets of R, the set of real numbers, are called

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Answer

real valued function

Question

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Answer

real valued function

Question

A rule which associates to each possible real number $x \in A$ a unique real number $f(x)\in B$ where A and B are subsets is called of R, the set of real numbers.

Answer

real valued function

MTH304

Question

A seriesis$\sum_{n=1}^{\infty} U_{n}$ is called _____ of the series of absolute values

Answer

absolute convergence

Question

The function f is said to be differentiable at z_{0} when its derivative at z_{0} _____

Answer

exists

Question

The _____of f at z_{0}, written as $f' (z_{0}\ )$, is define as $f' (z_{0}\ )=\lim_{z\rightarrow z_{0}}\frac{f(z)-f(z_{0})}{z-z_{0}}$

Answer

derivative

Question

If $\lim_{n\rightarrow \infty S_{n}(z)=S(z)}$), the series is said to be convergent and $S(z)$ is it’s _____, otherwise the series is said to be divergent.

Answer

sum

Question

If a sequence converges for all values of z (points) in a region R, we call R the region of _____

Answer

convergence of the sequence

Question

An_____of complex numbers $z_{1},z_{2},___z_{n},___$ has a limit z if for each positive number ε there exists a positive integral number such that $|z_{n}-z|<\in$ whenever $n>n_{0}$.

Answer

infinite sequence

Question

A complex function $f(z)$ is _____ If there exists a constant$M>0$ such that $|Z_{n}-Z|<\in$ whenever $n> n_{0}$.

Answer

bounded

Question

If $f(z)$ is a _____ Complex variable so also it’s real and imaginary parts.

Answer

continuous

Question

Continuity in complex variables can be treated analogously as in the _____

Answer

real variables

Question

Find the possible points of discontinuity of the function $f(z)=\frac{2z-3}{z^{2}+2z+2}$

Answer

$-1+\pm i$

Question

If a function $f(z)$ is it’s in a closed region, it is _____

Answer

bounded in the region

Question

The function $f(z)=e^{xy}+isin(n^{2}-2ny^{3}$ is continuous for all z because of the continuity of the polynomials on n and y as well as the continuity of the _____

Answer

exponential and sine function

Question

A function f is continuous at a point z_{0} if all the following conditions are satisfied except _____

Answer

$\lim_{z\rightarrow \infty} f(z)= L$

Question

A complex number L is said to be the limit of $f(Z)$ as Z approaches Z_{0} if for each positive number $\ln$ there is a positive number δ such that |f(Z)-L|<ε whenever $0<|Z-Z_{0} |<\delta$. We write

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Answer

$\lim_{z\rightarrow z} f(z)=L$

Question

Find the values of $\sin^{-1}2$

Answer

$-i Ln (2+3j)+\rac{\pi}{2}+1/2+k\pi)$

Question

If$ Z=\sinh w$ then $w=\sin h^{-1} z$ is called the _____

Answer

inverse hyperbolic sine of z

Question

Find all values of Z such that $e^{z}=-1$

Answer

$(2n+1)\pi$

Question

Rational algebraic functions are defined by$ F(Z)=\frac{P(Z)}{V(Z)}$ where $P(Z)$and $V(Z)$ are _____

Answer

polynomials

Question

If $W=Z^{3}$, then to each value of Z there is only one value of W,$ W=f(Z)=Z^{3}$ is a _____ of Z

Answer

single valued function

Question

A symbol, such as Z, which can stand for any complex number is called a _____

Answer

complex function

Question

A seriesis\(\sum_{n=1}^{\infty} U_{n} is called _____ of the series of absolute values

Answer

absolute convergence

Question

The function \(f\) is said to be differentiable at \(z_{0}\) when its derivative at \(z_{0}\) _____

Answer

exists

Question

The _____of f at (z_{0}\), written as \(f' (z_{0}\ ), is define as \(f' (z_{0}\ )=\lim_{z\rightarrow z_{0}\frac{f(z)-f(z_{0})}{z-z_{0}\)

Answer

derivative

Question

If $\lim_{n\rightarrow \infty S_{n}(z)=S(z)}$), the series is said to be convergent and $S(z)$ is it’s _____, otherwise the series is said to be divergent.

Answer

sum

Question

If a sequence converges for all values of z (points) in a region R, we call R the region of _____

Answer

convergence of the sequence

Question

An_____of complex numbers $z_{1},z_{2},___z_{n},___$ has a limit z if for each positive number ε there exists a positive integral number such that $|z_{n}-z|<\in$ whenever $n>n_{0}$.

Answer

infinite sequence

Question

A complex function $f(z)$ is _____ If there exists a constant$ M>0$ such that $|Z_{n}-Z|<\in$ whenever $n> n_{0}$.

Answer

bounded

Question

If $f(z)$ is a _____ Complex variable so also it’s real and imaginary parts.

Answer

continuous

Question

Continuity in complex variables can be treated analogously as in the _____

Answer

real variables

Question

Find the possible points of discontinuity of the function $f(z)=\frac{2z-3}{z^{2}+2z+2}$

Answer

$-1+\pm i$

Question

If a function $f(z)$ is it’s in a closed region, it is _____

Answer

bounded in the region

Question

The function $f(z)=e^{xy}+isin(n^{2}-2ny^{3}$ is continuous for all z because of the continuity of the polynomials on n and y as well as the continuity of the _____

Answer

exponential and sine function

Question

A function f is continuous at a point z_{0} if all the following conditions are satisfied except _____

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MTH301

Question

A set is open if it contains all its _____ points.

Answer

interior

Question

A set is closed if it contains all its _____ points.

Answer

limit

Question

Let X and Y be two topological spaces. The continuous bijection whose inverse is also continuous is called a _____From X to Y

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homeomorphism

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Let X and Y be two topological spaces. A $f: X\rightarrow Y$ is said to be _____ if and only for every closed subset U of Y, the pre-image is open $f^{-1} U$ is closed in X.

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Answer

Hausdorff

Question

A topological space (X,τ) is _____ if τ is induced on some metric on X

Answer

metrizable

Question

A topology τ contained another topology τ is called a _____ topology

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Answer

indiscrete topology

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A topology τ containing another topology τ is called a _____ topology

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finer topology

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The topology in which only \(\phi \) and X are open is called _____

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ESM392

Question

The earliest surviving aerial photograph was taken by _____

Answer

Gasper Felix

Question

what is the full meaning of T.M.

Answer

Thematic Mapper

Question

The microwave radiometer and the other sensors that have already been discussed are called _____.

Answer

passive sensors

Question

_____consists of more than ten spectral channels. Band widths are narrow which help to capture the finer spectral characteristics of the features that are captured by the sensors.

Answer

Super - spectral Imaging System

Question

_____orbits at a steep inclination relative to the equator, in the direction opposite the Earth’s rotation

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Answer

retrograde orbit

Question

A _____ orbit is established when a satellite is placed at a very high altitude, roughly 36,000km above the Earth’s equator and carried to the orbit Earth’s rotation.

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geostationary

Question

_____ are primarily stable wings aircrafts. Helicopters and ballons are occasionally used

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Answer

Aerial platforms

Question

_____ can be defined as the ability of the entire photographic system, including lens, exposure, processing, and other factors, to render a sharply defined image.

Answer

Resolution

Question

Oblique aerial photography is commonly used for _____

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Question

When the axis of the camera/lens is tilted intentionally at an angle of 30 to 900 to the ground the resulting photograph is said to be_____.

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oblique

Question

_____ is the scale at a point with a specific elevation on the ground.

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Point scale

Question

_____ is a natural satellite, whereas man-made satellites include those platforms launched for remote sensing, communication, and telemetry (location and navigation) purposes.

Answer

The moon

Question

_____ are objects which revolve around another object - in this case, the Earth

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Answer

Satellites

Question

_____ can also be used in small or large numbers, making it possible to collect seamless images over an entire country or state in a matter of days or weeks simply by having lots of planes in the air simulteneously.

Answer

Aircraft

Question

_____ are often used to collect very detailed images and facilitate the collection of data over virtually any portion of the Earth’s surface at any time

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Scale

Question

_____remote sensing platforms include vans, trucks, tractors, tanks, tall buildings, ladder

Answer

the land – based

Question

_____ spacecraft and skylab are other kinds of platforms.

Answer

Rockets

Question

A _____ is the commonest platform but helicopters, balloons and kites might be used in particular cases.

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ESM342

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Environment primarily refers to the _____dimension, social dimension and economic dimension.

Answer

Ecological

Question

Most environmental management strategies involve _____requirements.

Answer

Legal

Question

Multiple Actors Model _____ that the system of governance comprises multiple actors.

Answer

Argues

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The New Agency Model refers to creating a new_____ outside UNEP.

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Organisation

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The following government policies can affect the environment except_____

Answer

Complex Policy

Question

Environmental governance is a _____ in political ecology.

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Concept

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The capacity of government to have good environmental governance is linked to the following except _____

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Environmental governance refers to the _____ of organisation, rules, etc that regulate global environmental protection.

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Sum

Question

Federal responsibilities for environmental management include the collection, analysis and _____ of data relevant to EIA.

Answer

Distribution

Question

State responsibilities for environmental management include the _____ and enforcement of standard and regulations.

Answer

Monitoring

Question

Enforcement is a vital _____of encouraging governments, etc to meet their environmental obligations.

Answer

Part

Question

The Nigerian Environmental Policy presents specific guidelines for achieving sustainable development in _____ sectors in Nigeria.

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Fourteen

Question

Nigeria is confronted with the following environmental problems except _____

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The content of the Nigeria Environmental Policy is preventingly been implemented and invorporated into the VISION _____

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2020

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Compliance is the full_____ of environmental requirements

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Implementation

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A more common philosophy and impetus behind environmental management is the _____ of carrying capacity.

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Environmental compliance means _____ to environmental laws etc.

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Environmental policy instruments are _____used by government to implement their policies.

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Tools

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The purpose of environmental policy is to prevent, reduce or _____ harmful effects on nature and natural resources.

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Environmental policy is any _____deliberately taken to manage human activities,

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ESM328

Question

…… weed entered Nigeria through Benin Republic

Answer

Water hyacinth

Question

Invasion by alien species reduces biodiversity either through predation, competition or ……..

Answer

smothering

Question

According to WHO, …… percent of people in the developing world are reliant on traditional medicines

---

Answer

80

Question

The following animal species have disappeared from Nigeria

Answer

Giant Eland

Question

Recent estimate show that a total record of …… animal species have become extinct in Africa

Answer

126

Question

Natural habitats in Africa are being degraded or lost owing to a number of …… and …… causes

Answer

Proximate and ultimate

Question

One of the following is a consequence of clearing forest

Answer

Flood

Question

Tropical forests resources influence the climate through ……

Answer

Transpiration

Question

One of these could be used for the treatment of Hodgkin's disease and leukamia

Answer

Rosy periwinkle

Question

…… grows in the Americas from Mexico to Bolivia

Answer

Mahogany

Question

Tropical forests are noted for their beautiful …….

Answer

Woods

Question

The original forests of Puerto Rico contain more than 500 species of trees in …… botanical families

Answer

70

Question

The rosy periwinkle can be found in .....

Answer

Madagscar

Question

The following except one among the famous savannas popular for tourism

Answer

Savannah vegetation zone

Question

The backbone of African economy as well as the life support system for most of Africa's people are .....

Answer

Biological resources

Question

..... species fit into the system and provide food or eat food as part of a cycle

Answer

Native

Question

According to the climatic stability thoery, few species specializes into ..... during stable climate

Answer

Niches

Question

Studies show that between ..... and ..... million species exist on earth

Answer

3 and 30

Question

More than half of the world species are found in

Answer

Tropical forest

Question

Biodiversity is most commonly measured and reported at ..... level

Answer

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ESM324

Question

Waste management is _____ in environmental quality

Answer

critical issue

Question

_____ is the collection, transport, processing, recycling or disposal of waste material

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Answer

Waste management

Question

urbanisation has played an important role in reducing pressures on scarce land and_____

Answer

rural environmental resources

Question

Rural-urban interactions are significant parts of _____

Answer

fgrowth

Question

_____struggles are often about basic needs rather than enhancing already comfortable lifestyles

Answer

Environmental

Question

According to_____ the main components of sustainability are environment, equity and growth

Answer

WCED (1987)

Question

the Brundtland Commission published its report Our Common Future in_____

Answer

1987

Question

Many urban centres in the developing world have been built on ecologically _____

Answer

fragile lands

Question

_____approach involves the urban renewal process of the entire area to be carried out in stages

Answer

Sequential

Question

_____ is often controversial and sometimes involves the use of eminent domain

Answer

Urban renewal

Question

Apart from urbanization,_____ is another major cause of slum development

Answer

industrialization

Question

According to_____ two types of slum exist in Nigerian cities

Answer

Agbola (1987)

Question

_____is about acquiring land in the urban areas and serviced it with infrastructure such as road, water, electricity and sustainable drainage system

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Answer

Sites and Services Scheme

Question

_____ is one of the basic needs of man; it is vital to social welfare and to the development process as a whole

---

Answer

Shelter

Question

One result of the presence of a large number of poor people in the large cities of the developing world is the remarkable widespread growth of_____

Answer

shanty’ towns or squatters

Question

The Sectorial Model put forward by _____ suggests that the arrangement of land use is in sectors rather than the concentric zones

---

Answer

Hoyt (1959) Mark (1959)

Question

Recent fluctuations in fertility in urbanized societies and the difficulty of estimating future migration into small areas like individual cities make population forecasts_____

Answer

fraught with uncertainties

Question

Once a specialism had become established in a city, useful_____tended to be located there

---

Answer

ancillary services

Question

The expansion of the_____ was permitted during the nineteenth century by change in urban transport, services and food supply

---

Answer

urban population

Question

The development of the railway created a new situation; many would argue that this was the critical development in_____

Answer

transport

Question

Waste management is _____ in environmental quality

Answer

critical issue

Question

_____ is the collection, transport, processing, recycling or disposal of waste material

---

Answer

Waste management

Question

urbanisation has played an important role in reducing pressures on scarce land and_____

Answer

rural environmental resources

Question

Rural-urban interactions are significant parts of _____

Answer

fgrowth

Question

_____struggles are often about basic needs rather than enhancing already comfortable lifestyles

---

Answer

Environmental

Question

According to_____ the main components of sustainability are environment, equity and growth

---

Answer

WCED (1987)

Question

the Brundtland Commission published its report Our Common Future in_____

Answer

1987

Question

Many urban centres in the developing world have been built on ecologically _____

Answer

fragile lands

Question

_____approach involves the urban renewal process of the entire area to be carried out in stages

---

Answer

Sequential

Question

_____ is often controversial and sometimes involves the use of eminent domain

---

Answer

Urban renewal

Question

Apart from urbanization,_____ is another major cause of slum development

---

Answer

industrialization

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ESM322

Question

Bad taste and odour in public water supplies is caused by ?

Answer

Eutrophication

Question

Very fine sediments are usually less than ?

Answer

63µm

Question

Waste water is about ___ percent water by weight

Answer

99

Question

High ___can decrease the amount of available sunlight, limiting the production of algae and macrophytes

---

Answer

Turbidity

Question

Blue baby syndrome (methemoglobinemia) is caused by?

Answer

Nitrates

Question

Sources of water pollutants can also be divided into ?

Answer

2

Question

The ions responsible for salinity include all but one

Answer

Sulphur

Question

Most water pollution problems originate from ___ based activities

---

Answer

Land

Question

Water containing dissolved and suspended solids from municipal or industrial sources is known as ?

Answer

Waste water

Question

Organic matter affects the ___availability of minerals and elements

---

Answer

Biological

Question

All but one are ways in which human activites affect the ioinc compositin of surface and ground water

---

Answer

Changing the atmospheric discahge cycles

Question

___ is measured by comparing the dissolved solids in a water sample with a standardised solution

---

Answer

Salinity

Question

The major source of turbidity in the open water zone of most lakes is typically

---

Answer

Phytoplankton

Question

Malignancies in children is linked to

Answer

Pesticides

Question

___tend to be strongly associated with sediments in rivers, lakes, and reservoirs

---

Answer

Metals

Question

___ matter is important in the cycling of nutrients, carbon and energy between producers and consumers

---

Answer

Organic

Question

Organisms, populations, and communities composed of different species make up the ___ of aquatic ecosystems

---

Answer

Biological diversity

Question

The concentrations of all of the following except___ tend not to be heavily influenced by metabolic activities of aquatic organisms

---

Answer

Calcium

Question

The ___ composition of surface waters is usually considered to be relatively stable

---

Answer

Anionic

Question

There are ____ major global average concentrations of cations

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Answer

4

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ESM308

Question

Projects in developing countries can not be executed without the fundamental conditions of the establishment of a _____ (rural) society,

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Answer

Literate and numerate

Question

_____ is prevalent and biting hard on our rural communities

Answer

Information hunger

Question

African farms are referred to as _____by some Europeans and American writers.

Answer

Garden farms

Question

In the forest belt of West Africa only a few farms exceed ___

Answer

2 acres

Question

Irregularities of field shapes and farm sizes of rural areas is due to the absence of?

Answer

Technology

Question

Rudimentary irrigation agriculture practiced along the seasonal flood plains is known as?

Answer

Fadama

Question

____facilitates the production of goods and services

Answer

Infrastructure

Question

___ states that Rural development is a basis for economic development and information is an important ingredient in development process

---

Answer

Okiy

Question

Lack of development has a _____ correlation with the neglect of rural areas

---

Answer

Positive

Question

Information needs of rural communities are?

Answer

Multidimentional

Question

The conservativeness of the rural farmer leads to___ problem

Answer

Use

Question

The problem of the scattered nature of communities in rural aresa is known as?

Answer

Spatial problem

Question

Rural villages are mainly ____ in functions.

Answer

Commercial

Question

In rural areas roofs are mainly constructed with ____ or corrugated metal

---

Answer

Thatch

Question

Rural areas or the country or countryside are areas that are not _____

Answer

Urbanized

Question

United State Department of Health and Human Services notes that ____ of rural dwellers live below the poverty line.

Answer

15 per cent

Question

Many families living in rural areas are certified ___ people

Answer

Poor

Question

Everyone deserves equal access to social _____ and good living condition

---

Answer

Amenities

Question

Rural dwellers are associated with all of the following except?

Answer

Quality infrastructure

Question

The rural people lack the _____ and know-how to improve and manage effectively the world around them

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ESM306

Question

The absence of any form of property rights or ownership is also likely to encourage _____ use of environmental resources.

Answer

unsustainable

Question

Forests transport great quantities of _____ to the atmosphere via transpiration.

Answer

water

Question

The entire earth contains over _____ billion tons of biomass.

Answer

75

Question

Environmental justice demands that public policy be based on mutual respect and _____

Answer

justice

Question

Deforestation refers to the long-term reduction of the tree canopy cover below a _____ percent threshold

---

Answer

10

Question

The ozone layer of the earth's _____ plays an important role in depleting the amount of ultraviolet radiation that reaches the surface.

Answer

atmosphere

Question

The percentage composition of Nitrogen in the atmosphere is ____

Answer

none of the above

Question

_____ is used for paper, boxes, and a wide variety of other products.

Answer

Pulp

Question

Hydrosphere refers to the body of water on the _____ surface.

Answer

earth's

Question

Biodiversity is the sum total of all species of plants and animals, their genetic makeup and the _____

Answer

ecosytem

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Biodiversity is the sum total of all species of plants and animals, their genetic makeup and the _____

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Question

_____ consists of the physical fabric of a city - infrastructure, buildings, railway, roads, ports etc.

Answer

Hardware

Question

In tropical areas of the world, the forests remove over _____ gigatons of carbon per year from the atmosphere.

Answer

1.3

Question

Plate tectonics, mountain ranges, volcanoes, and earthquakes are _____ phenomena.

Answer

geological

Question

Ex situ preservation is the propagation of _____ species outside of their native habitat.

Answer

endangered

Question

Environmental management is concerned with the use and _____ of natural resources.

Answer

conservation

Question

_____ has increased due to human induced burning from fossil fuels and deforestation

---

Answer

Carbon dioxide

Question

Which of these is not a component of the atmosphere?

Answer

Cadmium

Question

Approximately ____ of the earth's surface is covered by water

---

Answer

0.71

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ESM304

Question

____ of events is a time schedule for carrying out the required tasks of the research project.

Answer

Calendar

Question

____ is a procedure used by scientists in order to generalize about a larger population.

Answer

Sampling

Question

Research designs may be classified into ____ major types:

Answer

2

Question

Science and research are founded on systematic ____ .

Answer

methodology

Question

____ordered ordinal data consist of a ranking of individual data points.

Answer

Strongly

Question

____ is based on .replication

Answer

Science

Question

Writing a research is an exercise in providing detail that will answer the questions of any reader or reviewer.

Answer

proposal

Question

Critical assessment of long held beliefs is the ____ step to new interpretation of the scientific truths.

Answer

first

Question

The way a researcher analyze data collected largely depends upon ____ things

Answer

2

Question

____is a means of playing with thoughts, and fragments of ideas.

Answer

Note-taking

Question

Data that are ranked either individually or in groups are referred to as ____.

Answer

ordinal

Question

Spatial analysis which is strongly ,

Answer

geographical

Question

____analysis also facilitates access to large spatial databases such as boundary files.

Answer

Spatial

Question

The analysis of ____can therefore play many important roles in research

Answer

numerical data

Question

Data can always be transformed from ratio to ordinal to ____

Answer

nominal

Question

____data contain the least information in that they are simply categories without any ordering.

Answer

Nominal

Question

There are ____ categories of sampling design

Answer

3

Question

Sampling theory is guided by ____ principles

Answer

2

Question

The accuracy of your estimates largely depends upon the way you select your .

Answer

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Question

It is important to identify any____ in your knowledge of relevant disciplines, such as statistics, required for analysis.

Answer

gaps

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CHM314

Question

Which of the following constitute the permanent gases of the atmosphere?

Answer

oxygen and nitrogen

Question

The average weather condition in a region over a long period of time is kwown as _____.

Answer

climate.

Question

The layer of mixture of gases that extends up to 700 kilometres above the Earth’s surface is known as _____.

Answer

atmosphere

Question

Which of the folowing is not part of the basic processes of Nitrogen Cycle?

Answer

precipitation

Question

Movement of water in its physical states through and around the planet is accomplished by the _____.

Answer

water cycle.

Question

Nitrogen is not readily available for cellular utilisation. This is because the strong triple covalent bonds between the nitrogen atoms in nitrogen molecules make it relatively _____.

Answer

inert

Question

Processses that remove carbon dioxide from the atmosphere include _____.

Answer

photosynthesis

Question

When \(CO_{2}\) dissolves in water, a hydrated \(CO_{2}\) molecule is produced which then forms an equilibrium mixture containing _____.

Answer

bicarbonate and carbonate ions

Question

In limestone, chalk and coral, carbon exist as _____.

Answer

calcium carbonate

Question

Which of the following is not a natural biogeochemical cycles?

Answer

hydrogen cycle

Question

Which of the following is not a source of input of pollutants to the soil?

Answer

ground water

Question

The soil acts as a filter which retards the passage of chemicals to the _____.

Answer

ground water

Question

In comparison with air and water, the soil is more variable and complex in composition and it functions as a ..... for pollutants

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Answer

sink

Question

Through which of the following ways could soil pollution become hazardous to human health _____.

Answer

food chain

Question

Which of the following does not pose a threat to the sustainability of soil resources?

Answer

agriculture

Question

Which of the following is not an air pollutant?

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Question

Airborne pollutants such as pollens and spores causing allergies in sensitive persons are called _____.

Answer

aeroallergens

Question

Radiation effects on human that cause noticeable damages to the individual e.g. anemia, cataracts, skin rash and cancer, are said to be _____.

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Sources of anthropogenic release of radioactive substances in aquatic environments excludes _____.

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Water used for cooling, discharge from electricity generating stations, could result in _____.

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ESM345

Question

___ both in space and time is an inherent characteristic of weather and climate

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Answer

Variability

Question

ICPC, 1995, reported that the largest portion of GHG emissions in human settlements is in the form of carbon dioxide (CO_2) from energy use in buildings amounts to about __ of carbon.

Answer

1.7 billion tonnes

Question

The desire of man to live in settlements includes the following reason except ?

Answer

Climate

Question

ASOS stands for_____

Answer

Automated Observing Systems

Question

Statistics show that there are ___ active volcanoes globally

Answer

575

Question

Departing and arriving aircraft are slowed by Air Traffic Control (ATC) when aircraft acceptance rates lowered to___of normal

Answer

75-50%

Question

The effects of weather conditions are felt at levels of operation

Answer

All

Question

Water is required in manufacturing industries for all of the following except?

Answer

Ripening

Question

Hailstones are hard pellets of ice of variable size and shape that fall from cloud

Answer

Cumulonimbus

Question

The ___ of the climatic environment plays a major role in economic decisions particularly where a high degree of risks is involved

Answer

Preception

Question

Oke (1978) states that there are ___ important elements to consider in building

Answer

4

Question

Three stages are involved in the process of erecting a building for whatever reason include all but one

Answer

Building asthetics

Question

Pulverized rock is also known as?

Answer

Volcanic ash

Question

The 1994 crash of an ATR-72 near Roselawn, Indiana, which claimed 68 lives, took place during___ conditions.

Answer

Icing

Question

Hazards associated with convective weather include ___with severe turbulence,

Answer

Thunderstorms

Question

All but one are affected by the climate during the rains

Answer

Mining

Question

___ functions as an economic timing mechanism

Answer

Climate

Question

The ultimate objective of econoclimate model is to assist man in using his ___ability to improve the social and economic outcomes of his weather-sensitive activities

Answer

Management

Question

____is perhaps the most commonly used analytical model in the economic analysis of weather

Answer

Regression analysis

Question

The thermal characteristics of the environment affects all but one ?

Answer

Soil water

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The effects of weather conditions are felt at levels of operation

Answer

All

Question

Water is required in manufacturing industries for all of the following except?

Answer

Ripening

Question

Hailstones are hard pellets of ice of variable size and shape that fall from cloud

Answer

Cumulonimbus

Question

The ___ of the climatic environment plays a major role in economic decisions particularly where a high degree of risks is involved

Answer

Preception

Question

Oke (1978) states that there are ___ important elements to consider in building

Answer

4

Question

Three stages are involved in the process of erecting a building for whatever reason include all but one

Answer

Building asthetics

Question

Pulverized rock is also known as?

Answer

Volcanic ash

Question

The 1994 crash of an ATR-72 near Roselawn, Indiana, which claimed 68 lives, took place during___ conditions.

Answer

Icing

Question

Hazards associated with convective weather include ___with severe turbulence,

Answer

Thunderstorms

Question

All but one are affected by the climate during the rains

Answer

Mining

Question

___ functions as an economic timing mechanism

Answer

Climate

Question

The ultimate objective of econoclimate model is to assist man in using his ___ability to improve the social and economic outcomes of his weather-sensitive activities

Answer

Management

Question

____is perhaps the most commonly used analytical model in the economic analysis of weather

Answer

Regression analysis

Question

The thermal characteristics of the environment affects all but one ?

Answer

Soil water

ESM343

Question

Currents circulate in paths called gyres, moving in a _____ direction in the northern hemisphere.

Answer

clockwise

Question

Air is held to the earth by _____

Answer

gravity

Question

Latitude influences the angle of _____ and duration of daylength.

Answer

incidence

Question

Nitrogen returns to the atmosphere primarily through biomass combustion and _____

Answer

denitrification

Question

Cold polar areas and subtropical continental deserts are locations where the volume of _____ can approach zero percent.

Answer

water vapor

Question

Above the tropopause is the _____.

Answer

stratosphere

Question

A zone with constant temperature in the atmosphere is called an _____ layer.

Answer

isothermal

Question

The majority of the ozone (about 97%) found in the atmosphere is concentrated in the _____

Answer

stratosphere

Question

Which of these is not a variable gas?

Answer

Hydrogen

Question

Dew-point temperature is the temperature to which air would have to be cooled for _____ to occur.

Answer

saturation

Question

An ocean current can be defined as a _____ movement of seawater at the ocean's surface.

Answer

horizontal

Question

The speed of air molecules corresponds to their _____ energy, which in turn corresponds to the amount of heat energy in the air.

Answer

kinetic

Question

Photosynthesis produces oxygen when carbon dioxide and water are chemically converted into _____

Answer

glucose

Question

These two gases, _____ and _____ make up approximately 99% of the dry atmosphere.

Answer

nitrogen and oxygen

Question

_____ in climate can be determined by the analysis of gas bubbles trapped in ice.

Answer

Fluctuations

Question

If the earth was a homogeneous body without the present land/ocean distribution, its temperature distribution would be strictly _____

Answer

latitudinal

Question

A _____ consists of two thermometers mounted side by side.

Answer

psychrometer

Question

The greater the difference in air pressure between any two places at the same altitude, the stronger the _____ will be.

Answer

wind

Question

In _____, German chemist, Justus von Liebig, first proposed that populations cannot grow indefinitely.

Answer

1840

Question

_____ stress at the interface between the ocean and the wind causes the water to move in the direction of the wind.

Answer

Frictional

Question

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_____ stress at the interface between the ocean and the wind causes the water to move in the direction of the wind.

Answer

Frictional

ESM341

Question

Zooplanktons are generally collected with a _____ net.

Answer

conical

Question

The process by which liquid solvent is evaporated, and the dry sample remains is called _____

Answer

desolvation

Question

Meteorological stations are divided into _____ types.

Answer

two

Question

The first requirement for remote sensing is to have an _____ source

---

Answer

energy

Question

_____ was first designed and used as a breath alcohol tester in forensic applications.

Answer

Steel evacuated container

Question

All but one of these is not a sensor _____

Answer

FURG

Question

The ____ has been the most widely used gas washing bottle for sampling of gases.

Answer

midget impinger

Question

The type of survey depends on the choice of _____ size.

Answer

quadrant

Question

The Mast ozone meter employs a chemicophysical method of detection to measure the quantity of _____ in a sample.

Answer

ozone

Question

_____ techniques always rely on the sensing of electromagnetic radiation.

Answer

Remote sensing

Question

_____ techniques allow one to measure many species with one instrument.

Answer

Universal

Question

One of these instruments does not depend on remote sensing principle _____

Answer

Amber analyzer

Question

_____ is often referred to as the power behind scientific investigation.

Answer

Instrumentation

Question

_____ is a tube that opens only at the bottom and measures water potential at the depth where the opening is located.

Answer

Piezometer

Question

Which of these is not a discipline under environmental science?

Answer

Gerontology

Question

The microphone is the interface between the _____ field and the measuring system.

Answer

acoustic

Question

Litmus paper changes colour based on whether the sample solution is acidic or basic, turning _____ or blue, respectively.

Answer

red

Question

Atomic absorption units have _____ basic parts.

Answer

four

Question

Lysimeter is an instrument that uses _____ to extract soil or groundwater from the ground.

Answer

suction

Question

The vacutainer system is an evacuated glass test tube shaped vessel, capped with a self-sealing _____rubber spectrum.

Answer

butyl

Question

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Answer

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ESM317

Question

Example of nuclear waste is

Answer

radioactive material

Question

Glass recycled is sorted by

Answer

color

Question

The temperature at which scrap glass melts is

Answer

high

Question

The most commonly recycled paper product is

Answer

news print

Question

Poyethylene tetraphthalate is represented as

Answer

PET

Question

In recycling of steel, how many methods are involved

Answer

2

Question

Pesticides can make birds to lay

Answer

all

Question

DDT, non degradable compound causes

Answer

secondary pollution

Question

Primary pollution causes

Answer

all

Question

Pollution is an accidental contaminant of the

Answer

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Question

Rapid industralization has caused

Answer

all

Question

The number of methods involved in recycling steel is

Answer

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Question

Recycling rate of aluminium is

Answer

0.35

Question

Pollution has effect on

Answer

natural resources

Question

Materials that causes pollution are called

Answer

pollutants

Question

Peroxyacetylene nitrate denotes

Answer

PAN

Question

The non point source of pollution is

Answer

water runoff

Question

Upper atmospheric region is known as

Answer

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Question

Environmental pollution is caused by

Answer

all

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The constituents of the environment are

Answer

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ESM311

Question

All are the coordinating bodies of Nigerian environment except ____

Answer

EPA

Question

Which of the following pollutant causes Reddish brown haze in the city?

Answer

Nox

Question

The first target of air pollutant in human is

Answer

Respiratory system

Question

All the folloiwng are aerosols excet____

Answer

VOC

Question

Which of the following gas is used as a coolant in refridgerators and air conditioners

---

Answer

CFCs

Question

Ozone as a pollutant has the following features except ____

Answer

It is found in the thermosphere

Question

All are anthropogenic sources of air pollution except ____

Answer

Forest fire

Question

According to chemical combination, pollutants are classified as all except____

Answer

Liquid

Question

One does not include classification of pollutant

Answer

According to it destination

Question

Which of the following forms acid rain

Answer

Sulphuric acid

Question

Which pollutant forms when nitrogen oxide oxyge and volatile organic compounds (VOCs) gets together

---

Answer

Petroxyacetynitrate

Question

The mixture of smoke and fog is called

Answer

Smog

Question

The chemical pollutantn that made up of hydrogen and carbon is

---

Answer

Hydro carbon

Question

Which of the following is a man made pollutant

Answer

Chemicals

Question

The substances that are directly emitted from a process such as ash from volcance eruption, carbon monoxide and sulphur dioxide is called ____

Answer

Primary pollutant

Question

Harmful solid, liquid or gaseous substances that are present in such concentration in the environment which tends to be injurious to living organisms is

---

Answer

Pollutant

Question

The energy source that emits 35672ag, of Co2, 5.036ag CH4 and 0.915ag of N20 is

---

Answer

Biomas burning

Question

The major energy source for domestic need especially by the poor is

---

Answer

Biomas

Question

The most single production of air pollution arising from human activity

---

Answer

Motor vehicle

Question

One of the following can be attributed to air pollution

Answer

Industrial revolution

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PUL303

Question

The court has held that a landowner has a right to the water which flows across his land and his rights to use the water should be reasonable. What case was the decision made?

Answer

Braide v Adoki

Question

The International Convention for Prevention of Pollution of the Sea of 1954 led to the enactment of ___

Answer

Oil in Navigation Waters Act

Question

"Every citizen shall have the right to a satisfactory and sustainable healthy environment and shall have the duty to defend it". Which law provides so?

Answer

S. 46 1992 Constitution of DRC

Question

The United Nations Conference on Environment and Development (UNCED) was held in__

Answer

Brazil

Question

Nigeria assented to the International Convention for the Prevention of Pollution of the sea by oil of 2954 in which year?

Answer

1968

Question

States have the responsibilty to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States'. Where was the statement made?

Answer

Principle 21 Stockholm Conf.

Question

The following factors/incidents except one are the major reasons for the emergence of the UN Conference on human environment in in Stockholm.

Answer

Irregular rainfall

Question

The book in question 2 above dealt into an area known as __ as it laid strong foundation for the emergence of evironmental law.

Answer

Environmental revolution

Question

In the year 1962, the first book relating to the environment was written by a renowned author. What is the name of the author?

Answer

Rachael Carson

Question

The following are the sources of Environmental in Nigeria, except one.

Answer

Administartive Decisions

Question

The following but one include the contents of Environmental law in Nigeria.

Answer

Engineering

Question

Unlike other laws, environmental laws are greatly influenced by the following fsctors except one

---

Answer

Hazadous substances

Question

The movement in the concept of environmental law, according to__ was orchestrated by the protection of the citizens health, balancing of ecosystem, etc.

Answer

Ogbuigwe

Question

Owing to the impact of industralisation on the environment, a new course of environmental law had to be charted which include the following except one

---

Answer

Air pollutions Act

Question

The primary source of oxygen from the sea/ocean is called ___

Answer

Phytoplankton

Question

The United Nations has adopted the Universal Declaration of Human rights (UDHR) in ___ year for the protection of international human rights

---

Answer

1948

Question

A Conference on Human Environment was held in 1972 by the __ to diagnose the unstaisfactory state of global environment.

Answer

United Nations

Question

The Koko toxic experience led the Nigerian Military Government to promulgate the Federal Environmental Protection Decree in __ year.

Answer

1988

Question

In essence, Environmental law draws from and is influenced by principles of environmentalism which includes the following except one.

Answer

Internship

Question

Environmental law is a branch of __ law

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Question

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ESM301

Question

The mechanism that provides capability for preparedness, response and mitigation needed to deal with emergency is called

---

Answer

Early warning mechanism

Question

All the following are vegetal resources associated with the forest ecological zone of Nigeria except

---

Answer

Millet

Question

All the following are attributes of a good mediator in a conflict situation except

---

Answer

biased disposition

Question

Conflict analysis is important and necessary so as to get adequate information and identify all except

---

Answer

all of the above

Question

Which of the following countries shares northern boundary with Nigeria

---

Answer

Niger

Question

One of the following describes capitalism

Answer

all of the above

Question

Coercion or conflict model of society believes that society evolves as a result of

---

Answer

Both A and B

Question

The originator and proponent of consensus theory of conflict resolution is

---

Answer

De Tocqueville

Question

The following are basic assumptions of the consensus or order model except

---

Answer

Social life depends on group unity

Question

Consensus in conflict resolution is defined by one of the following statement

---

Answer

agreement about the rules which should govern the parties

Question

German Sociologist credited with the delineation of the debate between the consensus and the conflict theories is

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Ralf Dahrendorf

Question

Coercion or conflict model of society submit that conflict arise in the society as result of all except

---

Answer

illiteracy

Question

The owner of capital and means of production in a capitalist economy with the objectives of maximizing profits at the expense of the working class as described by Karl Max are called

---

Answer

bourgeoisie

Question

Karl Max refer to working class people in a capitalist economy as

---

Answer

proletariat

Question

To foster peace values among Nigerian youth one of the following most be discourage

Answer

Segregation of schools along the path of faith

Question

All the following activities will promote community peace building except

Answer

defending wrong theologies or wrong interpretation of the scriptures

Question

All the following are likely to trigger conflict except

Answer

national peace dialogue

Question

When justice prevail ..... will exist

Answer

peace

Question

All the following activities will reduce conflict and encourage peace building among people except

Answer

segregation of settlement and dwelling places along religious divide

Question

Champion of peace training and right moral values of children at household level are

Answer

women

Question

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BIO320

Question

Vegetation can affect spores in air in all of the following ways except

---

Answer

All of the above

Question

One of the following is not a factor affecting abundance of microorganism in atmosphere

---

Answer

oxygen

Question

Important characteristic of spores are (i)size (ii)shape (iii)density

---

Answer

I, ii, iii

Question

All of the following are adaptations by fungi to enable them suspend spores in air except

---

Answer

short sporophores

Question

Factors affecting suspension of microbes in air include the following except

---

Answer

All of the above

Question

Dispersal of air-borne particles involves three stages, these are

---

Answer

liberation, dispersion, deposition

Question

Which one of the following does not affect the absorption of solar energy in soil?

Answer

soil nutrient

Question

All of the following are classification of microorganism based on temperature requirement except

---

Answer

Halophiles

Question

Soil pH is affected by all of the following except

Answer

oxygen concentration

Question

Based on pH, soil microorganisms have been classified into

Answer

Halophiles, alkalinophiles, acidophiles

Question

Which of these microorganism will be the first to colonise a cellophane buried in soil

---

Answer

Fungi

Question

Which of these group of organisms has a broad niche

Answer

Heterotrophic organism

Question

The succession and colonization of cellophane film is base on

---

Answer

Nutrition

Question

If fresh dung is kept under a bell jar in fairly suitable humidity the first micro organism to appear will be _____

Answer

Zygomycetes

Question

Which of these microorganisms act on cellophane by means of 'rooting'hyphae which then branches to form a kind of circular hyphal system.

Answer

Humicola species

Question

Which of these is the correct order of events in a community

Answer

colonisation,succession,modification,climax

Question

The first organisms to inhabit a new wound are known as _____

Answer

pioneers

Question

The role of a particular organisms in a particular place is the_____

Answer

Niche

Question

Community can be defined as_____

Answer

collection of microorganism inhabiting a given site in the ecosystem

Question

_____ is a combination of biotic and abiotic components of a specific environment

---

Answer

Ecosytem

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Question

Community can be defined as_____

Answer

collection of microorganism inhabiting a given site in the ecosystem

Question

_____ is a combination of biotic and abiotic components of a specific environment

Answer

Ecosytem

Question

Which of these microorganism will be the first to colonise a cellophane buried in soil

Answer

Fungi

Question

Which of these group of organisms has a broad niche

Answer

Heterotrophic organism

Question

The succession and colonization of cellophane film is base on

Answer

Nutrition

Question

If fresh dung is kept under a bell jar in fairly suitable humidity the first micro organism to appear will be _____

Answer

Zygomycetes

Question

Which of these microorganisms act on cellophane by means of 'rooting'hyphae which then branches to form a kind of circular hyphal system.

Answer

Humicola species

Question

Which of these is the correct order of events in a community

Answer

colonisation,succession,modification,climax

Question

The first organisms to inhabit a new wound are known as _____

Answer

pioneers

Question

The role of a particular organisms in a particular place is the_____

Answer

Niche

Question

Community can be defined as_____

Answer

collection of microorganism inhabiting a given site in the ecosystem

Question

_____ is a combination of biotic and abiotic components of a specific environment

Answer

Ecosytem

BIO318

Question

A situation where antigen has multiple identical epitopes is termed _____

Answer

polyvalency

Question

_____ capable of recognizing and different antigenic determinants in the body

Answer

accessory cells

Question

Macrophages secrete _____ whose responsible for attracting other cells

Answer

cytokines

Question

The substances that capable of elicit immune reaction is termed_____

Answer

immunogens

Question

_____is any substance that capable of reacting with antibodies

Answer

antigens

Question

_____ involved in eliciting allergic reactions

Answer

mast cells

Question

The site of maturation for T cells is_____

Answer

thymus

Question

Different types of blood are derived from a cell called _____

Answer

hematopoietic stem cells

Question

The completion of the maturation of B cells usually occur at

Answer

bone marrow

Question

Organs of immune system in the human are referred to as

Answer

lymphoid

Question

_____are soluble glycoproteins produced in a membrane bound form on B lymphocytes

---

Answer

vaccination

Question

The theory of clonal selection was proposed in 1957 by _____

Answer

McFarlane Burnet

Question

The total collection of antibody specificity available in an individual is known as _____

Answer

antibody repertoire

Question

The type of immunity conferred on the mother to her baby is called _____

Answer

passive

Question

B lymphocytes are involved in _____

Answer

humoral

Question

The following are properties of adaptive immunity except

Answer

division

Question

Specific or acquired immune response is also called _____

Answer

adaptive

Question

All of the following are type of innate immunity except _____

Answer

natural killer cells

Question

Two basic immune system are _____

Answer

adaptive and innate

Question

An epitope is also called _____

Answer

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Organs of immune system in the human are referred to as

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BIO316

Question

A single piece of information in a database is called_____

Answer

File

Question

The importance of files depends on the _____

Answer

the patronage it enjoys

Question

Flatfiles_____

Answer

are for holding underlying information in DDBJ/EMBL/GenBank

Question

A primary database contain experimental results that are ____

Answer

not curated

Question

The usefulness of DDBJ/EMBL/GenBank as the archive of all publicly available DNA, RNA and protein sequences is determined by _____

Answer

the quality of data contained in it

Question

One analytical method that enhances protein identification and mapping in recent times is

---

Answer

mass spectrometer

Question

Hundreds of complete genome sequences from both prokaryotes and eukaryotes have led to _____

Answer

the functional analyses of the proteins encoded by these genomes

Question

Which of the following is not true?_____

Answer

DDBJ/EMBL/GenBank operate by using common data format

Question

The most appropriate word for the operation and success of DDBJ/EMBL/GenBank databases is_____

Answer

synchrony

Question

Database pertaining to protein sequence and structural correlations called PROSIT was established in

---

Answer

1991

Question

The SCOP as structural classification of proteins is contained in

---

Answer

composite database

Question

Databases that obviate the need to search multiple resources are

---

Answer

composite database

Question

Orthology provides an important layer of information when considering

---

Answer

phylogenetic relationships

Question

Derived-information are contained in

Answer

secondary database

Question

The most computable primary data to be analyzed are

Answer

DNA, RNA, or protein sequences

Question

The most valuable components of primary data bases are:

Answer

DNA, RNA, or protein sequences

Question

Which of these is not in the categories of databases based on level of information it contains?

Answer

tertiary database

Question

DDBJ/EMBL/GenBank came into partnership in

Answer

1988

Question

The trio DDBJ/EMBL/GenBank stations on bioinformatics are located in

---

Answer

Japan, UK and USA respectively.

Question

Which of the following is most critical in the development of bioinformatics?

Answer

The need to collate and disseminate genomic information.

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BIO314

Question

At what stage do monkeys ride on their mother's back ?

Answer

Up to a year

Question

Whuch of these signs is used by chimpanzee to show anger

Answer

Slack jaw

Question

Which of these means of communication is used by gibbons to alert the group of danger?

Answer

high-pitched shouts

Question

All these are examples of grooming behaviour found in chimpanzee EXCEPT

Answer

defend their core area against other troops

Question

_____ is one in which the social group size and composition change throughout the year with different activities and situations.

Answer

A fission-fusion society

Question

The multimale-multifemale group relationship is common in all but one of these animals

---

Answer

gibbons

Question

In which of these mamammals is the monogamous family group not common

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Answer

baboons

Question

Which of these primates is known to practice the single female and her offsprings group type

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Answer

orangutans

Question

Which of these deals with the study of non-human primates?

Answer

primatology

Question

All these are examples of communication through vocalizations EXCEPT

Answer

Ants use pheromones to create scent trails to food

Question

_____ means series of predictable behaviors for fixed action patterns

---

Answer

instinct

Question

Which of these Scientists conducted an experiment of canine emotion?

Answer

Martin Seligman

Question

In which of these animals did imprinting study empathy

Answer

Gorilla

Question

Which of these is not a method of learning?

Answer

Inheritance

Question

All these are examples of releasers in bird species EXCEPT

Answer

All the options

Question

One of these is not one of of the explanations to Tinbergen’s question for ethology?

Answer

solution

Question

According to the evolution theory of Jean Baptiste Lamarck which of these statements is not true

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Answer

Animal organs are not affected by use

Question

According to concept of scala naturae,one of these is UNTRUE

Answer

More complex living begins are found at peak of the pyramid

Question

All these are true of ethology EXCEPT

Answer

It can be said to have begun in 1973

Question

One of these scientists does not belong to this group.

Answer

Albert Eistein

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BIO310

Question

In man, Leishmania occurs only in the _____ form.

Answer

amastigote

Question

In which of these diseases does the parasite destroy the Red Blood Cells?

Answer

Malaria

Question

The sandfly is the vector of _____

Answer

Leishmaniasis

Question

All but one of these vectors is not involved in the transmission of the american trypanosomiasis

Answer

Glossina sp

Question

The rapidly progressing form of African Trypanosomiasis is caused by

---

Answer

Trypanosoma brucei rhodesiense

Question

The enlargement of the lymph node in African Trypanosomiasis is called_____

Answer

Winterbottom’s sign

Question

Malaria is associated with _____

Answer

Anopheline mosquitoes

Question

Human malaria vector breeds in a

Answer

Stagnant clean water

Question

What is the infective stage of the malaria parasite?

Answer

Sporozoite

Question

_____ is not a malarial parasite of man?

Answer

Plasmodium yoelii

Question

Which of the following parasites is found in the macrophages?

Answer

Leishmania

Question

Cutaneous leismaniasis is also known as?

Answer

Oriental sore

Question

Visceral leishmaniais is caused by

Answer

Leishmania donovani

Question

Chagas disease is caused by

Answer

Trypanosoma cruzi

Question

_____ is a haemoflagellate?

Answer

Trypanosomia brucei

Question

The stage in which some protozoa actively feed and grow is _____

Answer

Sporozoite

Question

Which of the following is a flagellated protozoan?

Answer

Trypanosoma

Question

In the Phylum Apicomplexa, all the parasites are_____

Answer

Obligate Intracellular parasites

Question

A host in which a parasite lives its adult and sexual stage is a or an ____

Answer

Definitive host

Question

A parasite that lives in only one host, is said to be ----------

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Answer

obligate

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BIO308

Question

The Saharo-Arabian floristic region is covered by_____

Answer

deserts

Question

The Mediterranean Region was first proposed in the _____

Answer

19th century

Question

The Paleotropical Kingdom is a floristic kingdom comprising tropical areas of the following except

Answer

America and Oceania

Question

One of these floristic provinces is not part of the Madrean region.

Answer

Mexican lowlands Province

Question

How many archipelagos are in the Macaronesia floristic regions?

Answer

5

Question

The holarctic floristic kingdom is divided into ---------- sub divisions

---

Answer

3

Question

The Holarctic floristic Kingdom is also known as _____ kingdom

---

Answer

boreal

Question

The Boreal Kingdom is a floristic kingdom identified by a_____

Answer

botanist

Question

The Neotropical floristic Kingdom consist of the following provinces EXCEPT

Answer

Cape

Question

The floristic kingdoms include all of the following except

Answer

Mediterranean

Question

Capybara refers to a _____

Answer

Rodent

Question

The largest snake in the world mostly found in marshes and swamps is called _____

Answer

Anaconda

Question

Which of these represents monkeys?

Answer

Orangutans

Question

All of these is NOT an example of a temperate plants

Answer

Beechwood

Question

The characteristics that distinguish tropical species of trees from those of temperate forests include all of the following except

---

Answer

Exceptionally thick bark

Question

One of these combination of tropics or regions can be refered to as Pantropics

---

Answer

Asia and Carribbean

Question

Which of these regions is classified as a neotropic?

Answer

Caribbean

Question

Paleotropics are mostly found in most of these regions except

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Answer

Caribbean

Question

Which of the following is intrested in current factors responsible for the distribution of plants and animals?

Answer

ecological biogeography

Question

Which of the following may not be classified as a field of Biogeography?

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BIO306

Question

The marine environment is rich in all of the following except ____.

Answer

acidity

Question

__ can convert glucose to fat.

Answer

adipose cells

Question

The ability to maintain a relatinely constant body temperature independent of the environmental temperature is termed __.

Answer

endothermic

Question

Open circulatory system is found in the following groups of organisms except _____.

Answer

annelids

Question

The following are extracellular fluids except ____.

Answer

pyruvial fluid

Question

Animals whose body fluid concentration is exactly the same as that of their immediate environment are referred to as __.

Answer

osmoconformers

Question

Osmosis involves the movement of water across a __ membrane.

Answer

selectively permeable

Question

The following are true of polyploids except ____.

Answer

Meiosis is not regular in polyploids

Question

Chromosal changes that affects the whole set of chromosomes is referd to as _____.

Answer

Euploidy

Question

The excretory organs of the annelids is known as __.

Answer

nephridia

Question

The follwing are functions of circulatory system except ___

Answer

unilateral distribution of heat in the kidney

Question

__ is the tisssue for transport in mammals.

Answer

blood

Question

Which of the following is/are the excretory organs in crustaceans? I. green glands, II. coxal glands, III. antennal glands.

Answer

I and III

Question

In which of the following groups of organisms is the simplest true excretory organs found?

Answer

plathyhelminthes

Question

Possession of kidneys among vertebrates is a strategy for ___. I. terrestial adaptation II. osmoregulation III. water conservation.

Answer

I and III

Question

A selectively permeable membrane allows __ to pass through it.

Answer

water

Question

The excretory organs of Crustaceans are located in the ____ region.

Answer

head

Question

__ is the first metabolic product of protein?

Answer

ammomia

Question

Annelids exhibit __ pattern of excretion?

Answer

ureotelism

Question

Which of the following are pattern of excretion in animals? I. ammonotelism, II. uricotelism, II. ureotelism, IV. guanotelism

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Answer

all of the above

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Open circulatory system is found in the following groups of organisms except _____.

Answer

annelids

Question

The following are extracellular fluids except ____.

Answer

pyruvial fluid

Question

Animals whose body fluid concentration is exactly the same as that of their immediate environment are referred to as __.

Answer

osmoconformers

Question

Osmosis involves the movement of water across a __ membrane.

Answer

selectively permeable

Question

The following are true of polyploids except ____.

Answer

Meiosis is not regular in polyploids

Question

Chromosal changes that affects the whole set of chromosomes is referd to as _____.

Answer

Euploidy

Question

The excretory organs of the annelids is known as __.

Answer

nephridia

Question

The follwing are functions of circulatory system except ___

Answer

unilateral distribution of heat in the kidney

Question

__ is the tisssue for transport in mammals.

Answer

blood

Question

Which of the following is/are the excretory organs in crustaceans? I. green glands, II. coxal glands, III. antennal glands.

Answer

I and III

Question

In which of the following groups of organisms is the simplest true excretory organs found?

Answer

plathyhelminthes

Question

Possession of kidneys among vertebrates is a strategy for ___. I. terrestial adaptation II. osmoregulation III. water conservation.

Answer

I and III

Question

A selectively permeable membrane allows __ to pass through it.

Answer

water

Question

The excretory organs of Crustaceans are located in the ____ region.

Answer

head

Question

__ is the first metabolic product of protein?

Answer

ammomia

Question

Annelids exhibit __ pattern of excretion?

Answer

ureotelism

Question

Which of the following are pattern of excretion in animals? I. ammonotelism, II. uricotelism, II. ureotelism, IV. guanotelism

---

Answer

all of the above

Question

Which of the following is not a type of variation?

Answer

RNA level

Question

Which of the following are components of genetic variation? I Allelic diversity II Random associations III Non random associations of alleles Iv Recombinations

---

Answer

I and III

Question

Which of the following results in a deviation from Hardy-Weinberg distribution?

Answer

Non random mating

Question

The followings are conditions for natural selection except:

Answer

Mutation

Question

According to wright the probability of a fixation of a beneficial Allele is _____

Answer

2s

Question

Recombination can occur:

Answer

Between and within chromosomes

Question

____ found that pelements were transferred from some species in Drosphila willistoni to Drosphilamelanogaster?

Answer

Kidwell

Question

When was the phenomenon of polyploidy discovered?

Answer

20th C

Question

Who introduced the term polyploidy?

Answer

Winkler

Question

The following are evidences of evolution except _____.

Answer

Physiological

Question

The follwing are functions of circulatory system except ___

Answer

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Question

__ is the tisssue for transport in mammals.

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all of the above

Question

The marine environment is rich in all of the following except ____.

Answer

acidity

Question

__ can convert glucose to fat.

Answer

adipose cells

Question

The ability to maintain a relatinely constant body temperature independent of the environmental temperature is termed __.

Answer

endothermic

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Answer

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BIO304

Question

-------- are found all over the world and are the hottest and driest habitats on earth. Organisms that live in deserts develop special adaptations to help them cope with the harsh desert conditions.

Answer

Desserts

Question

------- biomes are traditionally defined mainly in terms of their vegetation which is influenced by climatic factors of latitude and humidity.

Answer

Terrestrial

Question

The nitrogen cycle is a complex process involving the activities of many genera of ------

Answer

bacteria.

Question

--------- refers to the interactions between individuals of different species, both of which require the same resources that is in short supply.

Answer

Interspecific competition

Question

The term population as used in human demography differs from the strict ------ use of the word..

Answer

Ecological

Question

Communities are affected by the ---------- features of where they occupy.

Answer

All of the options

Question

There are ------- types of survivorship curves used to describe the characteristics of mortality in different kinds of populations

---

Answer

3

Question

--------- can also be identified in the various types of symbiotic relations in which organisms have coevolved to the point of dependence.

Answer

Coevolution

Question

The --------- vary from terrestrial to aquatic and so, influence the types of communities living in them.

Answer

habitats

Question

Increased --------- especially in the tropical rainforests, a consequence of human population growth, also contributes towards harming the environment

---

Answer

deforestation

Question

A heavy infection of parasites called the --------- may eventually cause the death of the host

---

Answer

parasite load

Question

-------- live on the bodies of vertebrates mainly birds and mammals. They include lice and fleas.

Answer

external parasites

Question

------ occurs on bare, lifeless substrate like a rock or un-colonised ground which has never had any vegetation growing on it before or in open water like newly formed lakes.

Answer

Primary succession

Question

-------- is a process of ecological change over time in a given area of an ecosystem from simple to complex.

Answer

Succession

Question

-------- occurs when individuals of a single species or of the same species compete for a resource in short supply.

Answer

Intraspecific competition

Question

Ecosystems can broadly be divided into

Answer

All of the options

Question

All are the fundamental steps in the operation of the ecosystem except

---

Answer

Transformation to forms unsuitable for the nutrition of the producers.

Question

------ is a term used to represent a whole community of organisms and its environment as a unit

---

Answer

Ecosystem

Question

Each level of feeding is called a ------- level with the plant producers forming the first level.

Answer

trophic

Question

Among the challenges to the environment posed by human activities are releases of harmful materials into the environment found responsible for causing --------

---

Answer

All of the options

BIO313

Question

Several different levels may be recognized in a food web; the herbivores, feed directly

Answer

Primary consumer and Secondary consumers

Question

A food web is composed of the following

Answer

Producers and Consumers

Question

The complicated feeding relationships that exist among organisms in natural ecosystem

Answer

Food web

Question

The rate of biomass accumulation by heterotrophs therefore is

Answer

Secondary productivity

Question

Succinctly, the ecosystem biomass is define as

Answer

The net weight of all organisms living in an ecosystem

Question

The two types of end products arising from the amount of organic matter of an

Answer

Gross primary productivity and Net primary productivity

Question

The term used to describe the amount of organic matter an ecosystem produces from

Answer

Primary productivity

Question

The following are examples of heterotrophs in the ecosystem

Answer

Herbivores and Carnivores

Question

They are defined as consumers that are unable to produce, are constantly looking for

Answer

Heterotrophs

Question

The biotic component in the ecosystem produce their own organic nutrients for

Answer

Autotrophs

Question

The interactions where one organism increases while the other not affected, in the

Answer

Commensalism

Question

The interactions where there is decrease in both species in expected outcome best defines

Answer

Competition

Question

The set of conditions where under an organism exists in nature is termed

Answer

Realized niches

Question

All conditions where under an organism can potentially survive and reproduce refers to

Answer

Fundamental niche

Question

The two types of niches are usually looked at by an ecologist include

Answer

Fundamental and realized niches

Question

A Niche is molded by

Answer

Abiotic and biotic factors

Question

The functional role the organism plays in its community, including its habitat as well as

Answer

Ecological Niche

Question

Which of these best define a habitat?

Answer

An environment wherein an organism lives and reproduces

Question

How do abiotic factors affect community most?

Answer

Composition and Diversity of a community

Question

The list of abiotic factors below excludes

Answer

Algae

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BIO311

Question

Before 1925, which group of fungi are called water moulds?

Answer

Oomycetes

Question

Which of these is not an order in the class Oomycetes?

Answer

Blastodiales

Question

Which of these types of reproduction is not found in Chytrids?

Answer

Oogamy

Question

Pleurotus is an example of the order _____

Answer

Agaricales

Question

Melanconiales is an order in the class of Coelomycetes in the sub-division of

Answer

Deutromycotina

Question

The order Ascomycetales is in the class _____

Answer

Hemiascomycetes

Question

Pyrenomycetes is a class of fungi found in the division called _____

Answer

ascomycotina

Question

The fruiting bodies in fungi that is saucer shaped is called _____

Answer

Apothecium

Question

The class of fungi that derives its name as a result of fusion of two gametangia is

Answer

Zygomycetes

Question

Which of these classes of fungi contains fungi that have a single posterior whip-like flagellum?

Answer

Chytridiomycetes

Question

Which of these divisions of fungi is not under modern classification of fungi?

Answer

Zygomycotina

Question

Which of these classes of fungi is not a lower class of fungi?

Answer

Ascomycetes

Question

How many classes are in the sub-division Eumycotina?

Answer

8

Question

The mushroom that grows in termite hill is scientifically called _____

Answer

Termitomyces

Question

Which of the following is not used as part of a systematic nomenclature of mushrooms in Nigeria?

Answer

Size of stipe

Question

In which order is Saccharromyces carlbergensis found?

Answer

Endomycetales

Question

Zoospores with single flagellum are found in the group of fungi called

Answer

Hapolmastigomycotina

Question

Classification on the basis of hyphae was a convenient method of classification of fungi in the year

---

Answer

1940s

Question

When the hyphae of a fungus are divided into a number of clamp connections, the fungus belong to _____

Answer

Basidiomycetes

Question

Which of the following is not part of primitive classification of fungi?

Answer

Propagules

Question

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BIO309

Question

What term is used to describe the undesirable genes that are tightly linked to the desired ones in breeding?

Answer

Linkage drag

Question

Which of these is a commonly used marker for the selection of transformed plants?

Answer

Antibiotic resistance

Question

Which of these is not needed to genetically modify a plant?

Answer

A marker to drive transcription of the new gene

Question

Which of these is an advantage of genetic modification over classical breeding?

Answer

The majority of the plant’s genome is not altered

Question

A crossable plant species whose genes are used under control of its native promoter for genetic modification is called

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Answer

Cisgenic plant

Question

Plants resulting from addition of a gene are referred to as

Answer

Transgenic plants

Question

A cultivated crop species that has evolved from wild populations due to selective pressures from traditional farmers is called

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Answer

Landrace

Question

A plant whose origin or selection is due primarily to anthropogenic activity is called

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Answer

Landrace

Question

Adding a specific gene or genes to a plant, or knocking down a gene with RNA to produce a desirable phenotype leads to

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Answer

Genetic modification

Question

What method is used for producing homozygous plants from a heterozygous starting plant with all the desirable traits?

Answer

Reverse breeding

Question

The maternally inherited trait that makes plants produce sterile pollen is referred to as

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Answer

Cytoplasmic male sterility

Question

In what year was the term heterosis described?

Answer

1908

Question

The breeding technique, cytoplasmic male sterility, was developed by

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Answer

Marcus Morton Rhoades

Question

The tendency of the progeny of a cross to outperform both parents is referred to as

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Answer

Heterosis

Question

Another name for hybrid vigour is

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Heterosis

Question

The mass of acromatic material which surrounds the chromonemata is called

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Answer

Matrix

Question

The thread-like coiled structures present in chromatids of chromosomes are known as

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Answer

Chromonema

Question

The following, except one, are recessive conditions in humans resulting from inbreeding

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Answer

Haemophilia

Question

The offspring of a full sib mating are referred to as

Answer

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Question

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BIO307

Question

In the simplest case, gene frequency is measured by counting the frequencies of each ___ in the population

---

Answer

gene

Question

___ = the number of a specific type of allele divided by the total number of alleles in the gene pool.

Answer

Gene frequency

Question

The following are conditions for Hardy Weinberg’s principle except ___.

Answer

natural selection occuring

Question

Experts in population genetics pursue their goals by employing the following methods except __.

Answer

None of the options

Question

The effect of genetic drift is larger for alleles present in a ___ number of copies.

Answer

smaller

Question

The following are types of mutations based on their phenotypic effect except ____ mutation.

Answer

point

Question

The following are mechanisms for speciation except _____speciation

Answer

none of the options

Question

Gene flow is the exchange of genes between populations, which are usually of _____ species.

Answer

same

Question

The following are types of mutation by inheritance except _____ mutation.

Answer

Leathal

Question

The cross breeding of two related species to produce a new hybrid species is a type of ____ speciation.

Answer

Sympatric

Question

___ theoritic is the most developed.

Answer

Classic population ecology

Question

____ criticized the role of genetic drift by means of sampling error. I. Gillespie II. Proyine III. Kimura

Answer

I and II

Question

The following are related ploymorphisms except ____.

Answer

Speciation

Question

_____ is the major source of variation.

Answer

Mutation

Question

The following are the causes of spontaneous mutation except ____.

Answer

Radiation

Question

Sexual isolation between two species can be ____.

Answer

Asymmetrical

Question

The following are types of mutation by inheritance except _____.

Answer

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Question

Life originated on earth ____ billion years ago

Answer

3.7

Question

Evolution can be best described as _____.

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A series of changes across successive generations in a biological population

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____ had shaped the existing pattern of biodiversity. I speaciation II Mutation III Extinction

---

Answer

I and III

Question

In the simplest case, gene frequency is measured by counting the frequencies of each ___ in the population

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Answer

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Question

___ = the number of a specific type of allele divided by the total number of alleles in the gene pool.

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Gene frequency

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The following are conditions for Hardy Weinberg’s principle except ___.

Answer

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Question

Experts in population genetics pursue their goals by employing the following methods except __.

Answer

None of the options

Question

The effect of genetic drift is larger for alleles present in a ___ number of copies.

Answer

smaller

Question

The following are types of mutations based on their phenotypic effect except ____ mutation.

Answer

point

Question

The following are mechanisms for speciation except _____speciation

Answer

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Question

Gene flow is the exchange of genes between populations, which are usually of _____ species.

Answer

same

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Question

The cross breeding of two related species to produce a new hybrid species is a type of ____ speciation.

Answer

Sympatric

Question

___ theoritic is the most developed.

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Classic population ecology

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____ criticized the role of genetic drift by means of sampling error. I. Gillespie II. Proyine III. Kimura

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The following are related ploymorphisms except ____.

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The following are the causes of spontaneous mutation except ____.

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BIO305

Question

Most organisms have complete sets of matching chromosomal pairs, known as_____

Answer

Autosomes

Question

Down syndrome is a condition where person inherits three copies o

---

Answer

chromosome 21

Question

The presence of the Y chromosome determines that a zygote will develop into _____offspring

---

Answer

male

Question

Gametes or sex cells (eggs and sperm) contain only _____the number of chromosomes found in the other cells of an organism

---

Answer

half

Question

_____ are alternate forms of the same gene

Answer

Alleles

Question

Each chromosome contains many genes, and each gene is located at a particular site on the chromosome, known as the _____

Answer

Locus

Question

Chromosome within a cell occurs in matched pairs called_____

Answer

Centromere

Question

Sometimes crossing over or recombination occurs in a cistron to provide another sub-divisional concept of the cistron called_____

Answer

Recon

Question

The smallest genetic unit or length of DNA that can mutate is known as_____

Answer

Muton

Question

_____ is referred as the smallest functional region on a chromosome

---

Answer

Cistron

Question

The techniques of Molecular Biology includes all the following EXCEPT

Answer

biophysicochemical techniques

Question

The individual DNA fragments is allow to be propagated in bacteria and isolated in large amounts through_____

Answer

Molecular cloning

Question

The term molecular biology was first used in_____by William Astbury to refer to the study of the chemical and physical structure of biological molecules

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Answer

1945

Question

_____is mechanisms responsible for the transmission and expression of the genetic information that ultimately governs cell structure and function

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Answer

Molecular biology

Question

_____ is example of organism used as model in genetics engineering for eukaryotic cells

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Answer

yeast

Question

One of the following is not reason why E. coli adopted for experimental model in genetics engineering

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non-pathogenicity

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metabolic pathway

Question

One among the following are refers to as extra-chromosomal gene

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Answer

Plasmid

Question

_____ is the process which allows individual DNA fragments to be propagated in bacterial and isolated in large amount

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Answer

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Study of molecular biology involved the knowledge of the following except

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BIO303

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In what year did were the first commercial scanning electron microscope produced by Cambridge Instruments ?

Answer

1965

Question

Which of these is NOT associated with the invention of electron microscope?

Answer

Zacharias Janssen

Question

All these are advantages of autoradiography EXCEPT

Answer

The probe has to be labeled with fresh radioisotope

Question

Which of these is NOT a type of microscope

Answer

Resonance microscope

Question

Which of these is an advantage of the dark phase microscope

Answer

It is possible to see cells in action

Question

Which of these is true of dark field microscope

Answer

The condenser illuminates the object obliquely.

Question

One of these is an advantage of a phase contrast microscope

Answer

It is used to study the effect of different chemical and physical agents on the living cell

Question

The ability to distinguish between two objects as separate entities is refered to as _____

Answer

resolution

Question

Which of these parts of the light microscope is invovled with the positioning of the slide

Answer

Stage

Question

Which of these parts of the light microscope is NOT invovled with the image?

Answer

Eyepiece

Question

Structural Chromosomal Variations include all but one of the following

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Answer

Multiplication

Question

Cytogenetic techniques employed procedures such as the following except , and

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Answer

colouring

Question

Which of these scientists may not likely be regarded as father of cytogenetics?

Answer

Charles Darwin

Question

Which of these is the study of how chromosomal behavior and how alterations in their structure and number affect cellular function and the organism as a whole?

Answer

Cytogenetics

Question

Which of the following deals with information as it pertains to cell structure and function?

Answer

cytology

Question

Cytogenetics is a combination of

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Which of the following is not true about viruses?

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They replicate on their own

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Which of these pairs proposed the Cell theory?

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Which of coined the word Cell

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All these are disadvantages of Electron microscopes EXCEPT

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BIO301

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Agents that can cause breaks in chromosomes include

Answer

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The study of the frequency and interaction of alleles and genes in population is called

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Question

The following are component of a nucleotide except ____.

Answer

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Question

Chromosome abnormalities include the following except

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In the study of chromosome, each chromosome pairs is assigned a special number

Answer

1 to 22

Question

One of the major evolutionary forces affecting population is

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All the options

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Uracil is only found in

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FISH technology is one of the methods used to determine

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Genetic structuring can be caused by the following except

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The tendency for natural popluations to rarely interbreed as convenient in theoretical random models is termed

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Answer

panmixy

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Mathematics of allele frequency change at a single gene locus was worked out by

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Hybrids produced when two different sets of chromosomes are unable to pairs during meiosis is

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The major source of raw material for evolving genes are

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What is the mechanism organism have evolved to remove mutations

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Polyploidy is important in hybrids because it allows

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