BIO102 - GENERAL BIOLOGY II SUMMARY

More than _____ million kinds of living organisms have been examined and described.
1.8

_____ a Greek philosopher was the first to make an attempt to classify living organisms.
Aristotle

Aristotle is a _____ philosopher
Greek

Aristotle is a Greek_____
Philosopher

The first person to make an attempt to classify living organisms is _____
Aristotle

The present method of classifying and naming living organisms is based on the work of _____
Linnaeus

Linnaeus (1707-1778) is a _____ naturalist.
Swedish

Linnaeus a Swedish_____.
Naturalist

The study of the general principle of classification is known as_____.
Taxonomy

Taxonomy is otherwise known as_____
Systematic

_____ has the largest group of organisms in the hierarchy of living organisms
Kingdom

The _____ has the largest variety of organisms.
Kingdom

The kingdom has the_____ variety of organisms.
Largest

The _____ is the smallest unit of Classification.
Species

The species is the _____ unit of Classification.
Smallest

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Organisms within a species are very closely related.
True

The use of a standard system to name living organisms is called_____
Binomial Nomenclature

_____ is the use of a standard system to name living organisms
Binomial Nomenclature

In _____ Nomenclature, each kind of organisms is given two names
Binomial

In Binomial Nomenclature, each kind of organisms is given _____ names
Two

In Binomial Nomenclature, each kind of organisms is given two names:_____
generic name and species name

The genius name begins with an initial _____
capital letter

The scientific name of Pawpaw is_____
Carica Papaya

The scientific name of Lizard is_____
Agama agama

All living organism were placed into ____ kingdoms by Linnaeus.
Two

All living organism were placed into two kingdoms by_____.
Linnaeus

Which scientist placed all living organism into two kingdoms?
Linnaeus

The two Kingdoms are_____
plants and animals

In_____, Whittaker proposed the five- kingdom classification
1969

_____ proposed the five- kingdom classification
Whittaker

Whittaker proposed the _____ kingdom classification
Five

The five kingdom classifications according to Whittaker are: Moneras, Protists, Fungi, Plantae and _____
Animalia

The classifications which are generally used at present are:

- Moneras

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- Protists
- Fungi
- Plantae
- Animalia

The Kingdom Monera contains the prokaryotes – Which are the very simple –celled organisms that has no true nuclei.

The Kingdom Monera contains the _____
prokaryotes

The eukaryotes - which cells are highly organized with definite or true nuclei are classified into the four remaining kingdom: protist, fungi, plantae and animalia.

The kingdom protist, fungi, plantae and animalia are classified as the_____
Eukaryotes

The _____ are simple-celled organisms that have no true nuclei.
Prokaryotes

The _____ are organisms having cells are which are highly organized with definite or true nuclei
Eukaryotes

Kingdom Monera (Prokaryotes)
- Single- Celled organisms
- motile or non-motile
- microscopic Simple – Celled Structure with no definite nucleus

Examples includes Bacteria, Blue-green algae, actinomycetes

Kingdom Protista (Eukaryotes)
- Single –Celled, motile or non-motile
- Organisms are much larger than the monerans
- Complex Cell Structure with a definite nucleus

Examples includes: Chlamydomonas, Amoeba

Kingdom Fungi (Eukaryotes)
- Non-motile organisms usually of thread-like structure or hyphae.
- Plant- like but cannot carry out photosynthesis due to absence of chlorophyll
- Obtain food through surface from living or non living organism source by absorption
- Reproduction could be by asexual or sexual or sexual spores

Examples includes: moulds, Mushrooms, shine moulds, yeasts.

Kingdom Plantae
- Many-celled
- Non-motile
- Contain chlorophyll that enables them make their own food by photosynthesis.
- Plants have indeterminate growth

Examples includes: Mosses, Ferns, Pines, Seed Plants (yam, bean, and plants).

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_____ can readily be understood in the context of their autotrophic mode of nutrition.
Plants

Plants can readily be understood in the context of their _____ mode of nutrition.
Autotrophic

_____ transform light energy into chemical energy
Plants

Plants transform _____ energy into chemical energy
Light

Plants transform light energy into _____ energy
Chemical

Plants transform _____ energy into _____ energy by anchoring firmly in one place with a maximum surface area to capture sunlight.
Light, chemical

Plants transform light energy into chemical energy by anchoring firmly in one place with a maximum surface area to capture_____.
Sunlight

Plants use the cheapest material around, water and carbohydrate to generate size.
True

Plants are immobile
True

Plants have a unique mode of development.
True

Plants produce _____ at their tips.
Meristems

Plants have remarkable power of regeneration.
True

The following statements are true of plants

- They transform light energy into chemical energy
- Plants use the cheapest material around, water and carbohydrate to generate size.
- Plants are immobile
- The give meristems at their tips
- Plants have remarkable power of regeneration
- Any single plant cell can regenerate an entire plant with its cell types
- The cells have cellulose cell wall

The plant kingdom is mainly classified into:

- Algae
- Bryophytes
- Pteridophytes
- Gymnosperms

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- Angiosperms
- Thallophytes (Alga)

Algaes is also known as_____
Thallophytes

_____ are the simple green plants.
Algae

The simple green plants are called_____
Algae

The following statements are true of algae
- Algae is also known as Thallophytes
- They are the simple green plants.
- They are aquatic plants (lives in water) that are thread like or flat (thallus) bodies with no roots or stems.
- They inhabit damp places on the land surface.
- They exhibit a distinct alternation of generation.
- The sporophyte is always attached and dependant on the gametophyte.

The _____ colonized the terrestrial habitats
Bryophytes

Bryophytes colonized terrestrial habitats but still dependant on water for completion of their life cycle.
True

The following statements are true of Bryophytes
- Bryophytes colonized terrestrial habitats
- They are still dependant on water for completion of their life cycle
- They produce motile gametes which require a thin film of water for their motility
- Bryophytes are regarded as amphibians

The following are the uses of algae
- Source of food for fresh water and marine organisms
- They are used as biofertilizer
- Controlling pollution in water bodies
- In the purification of sewage

Pteridophytes, Gymnosperm and Angiosperm are collectively called_____
Tracheophytes

The _____ are known as vascular plants.
Tracheophytes

The tracheophytes are known as _____plants.
Vascular

The tracheophytes are known as_____.
Vascular plants

The tracheophytes are known as vascular plants because_____

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they have vessels or vascular tissues for conducting water and food

The largest group of plants are _____
Tracheophytes

All animals belong to the kingdom_____
Animalia

The following are the characteristics of kingdom animalia

- All animals belong to this kingdom.
- They are multicellular, eukaryote heterotrophy (organism).
- They lack photosynthetic pigments and obtain nutrients by ingesting other organisms.
- Their Cells lack cell wall.
- Many of the members exhibit advanced tissue differentiation and complex organ systems and move about freely, they are characterized by quick response to stimuli, with specialized nervous tissue for coordination.
- Growth is determinate

Growth is _____ in animals
Determinate

Growth is determinate in animals
True
Animal cells lack cell wall.
True

Animal cells have cell wall.
False

Animals are classified into _____main groups
Two

Animals are Classified into Two Main Groups

- Invertebrata (invertebrate): animals with no backbone
- Vertebrata (vertebrate) : animals with backbone

Animals are classified into the groups: **Invertebrata** and_____
Vertebrata

The animals with no backbone are called_____
Invertebrate

The animals with backbone are called_____
Vertebrate

Algae are unicellular, Colonical, filamentous and thalloid in form.

Morphologically, algae can be distinguished as unicellular, colonial, filamentous, heterotrichus, thalloid and polysiphoid forms.

Anacystis and Microcystis are examples of _____Algae
Unicellular

Microcystic and Volvox are examples of _____ Algae

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Colonial

Nostoc, Ulothrix and Oedogonium are examples of _____ Algae
Filamentions

Draparnaldiopsis, Coleochaete and Ectocarpus are examples of_____ algae
Heterotrichous

Ulva and Fucus are _____
Thalloid

Red algae are called_____
Polysiphonia

The characteristic forms of Algae

- They are simple plants without roots, stems and leaves.
- They have Chlorophyll. Some have blue, yellow, brown and red pigments with the chlorophyll. Majority are uni-cellular while few are multicellular.
- Some, such as sea weeds are large.
- They are mainly aquatic, with a few on damp soils and shady places examples are spirogyra, anabaena and Sargassum
- The cell wall of algae is composed of a true celloulose.
- Reserve carbohydrates are usually starch and not glycogen as in fungi.

Nostoc, Anabaena, Oscillatoria belong to the class of algae called_____
Cyanophyta

Chlamydomonas, Spirogyra, Chlorella belong to the class of algae called_____
Chlorophyta

Fucus, Sargassum, laminaria belong to the class of algae called_____
Phaeophyta

Vaucheria, and Botrydium belong to the class of algae called_____
Xantophyta

Synura, Mallomonas, Chromalinabelong to the class of algae called_____
Chrysophyta

Euglena and Trachelommas belong to the class of algae called_____
Euglenophyta

Ceratium and Peridinum belong to the class of algae called_____
Dinophyta

Crytomones and Chroomonas belongs to the class of algae called_____
Crytophyta

Diatoma and fragilaria belongs to the class of algae called_____
Bucillariophyta

Brown algae belong to the class_____
Phaeophyta

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The yellow –green algae belong to the class _____
Xantophyta

The Golden-Brown algae belong to the class _____
Chrysophyta

The Euglenoids belong to the class _____
Euglenophyta

The Dinoflagellates belong to the class _____
Dinophyta

Crytomanads belong to the class _____
Crytophyta

Diatoms belong to the class _____
Bucillariophyta

Spirogyra belongs to the family_____
Chlorophyceae

Spirogyra belongs to the order_____
conjulaes

_____ is a cosmopolitan plant which forms a tangled mass of filaments floratiny on stagnant fresh water, especially in ponds, ditches, springs and streams.
Spirogyra

Species of spirogyra produce a short unicellular organ of attachment called _____, for anchorage on Sea weeds.
Hapteron

A short unicellular organ of attachment found in some species of spirogyra is called_____
Hapteron

_____ is commonly found as bright green masses of thread-like or filamentous structures on the surfaces of waters
Spirogyra

Spirogyra is commonly referred to as a _____
Pond Scum

___ is commonly referred to as a "Pond Scum".
Spirogyra

Structure of a Spirogyra

- Mature filament is unbranched and consists of single row of identical cylindrical cells joined end to end.
- Cell wall is made of Cellulose and pectin External cell wall is covered by mucilage, making it shinny. Cyloplasm is a thin layer with spiral bands of chloroplast.
- Nucleus is suspended at the centre by strands of Cytoplasm.
- Chloroplast contains small nodular protoplasmic bodies called the pyrenoids.
- Starch grains are deposited around each pyrenoid.

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The composition of a community is determined by the physical and chemical nature of the habitat.
True

The composition of a community is determined by the _____ and _____ nature of the habitat.
physical and chemical

_____ habitats comprise of rivers, mountains streams, lakes and temporary rainwater puddles.
Fresh water

The _____ inhabits largest number of algae collectively known as seaweed.
Sea

Sea inhabits largest number of algae collectively known as_____ .
Seaweed

Example of seaweed include Sargassum wightii (brown algae), Turbinaria, gracilaria edulis

Anabaena is an example of_____ algae
Terrestrial

_____ are considered to be the first land plants.
Bryophytes

Bryophytes are considered to be the _____ land plants.
First

Bryophytes are considered to be the first _____ plants.
Land

During the course of evolution, a change from aquatic habitat to terrestrial habitat occurred and the only primitive land plants evolved. These are known as_____.
Bryophytes

The general characteristics of Bryophytes include these

- Bryophytes lack roots and do not have vascular system.
- Some mosses have a primitive system of tubes that conduct water and food – conducting tubes are called leptoids.
- It seldom grows large because of lack of supporting tissues.
- Bryophytes show two distinct and well defined phases of life cycle, sexual and asexual which follow each other.
- The gametophyte is haploid and produces gametes.
- The Sporophytes is diploid and produces spore.
- The haploid generation alternates with diploid genetic known as Alternation of generation.
- They grow in deserts, mountains.
- In dry areas, their growth and activity is restricted to wet season only.

The gametophyte of bryophytes is green, photosynthetic and nutritionally independent and anchors to the soil by unicellular or multicellular filaments called_____.
Rhizoids

Mosses have a primitive system of tubes that conduct water and food – conducting tubes are called_____.
Leptoids

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In bryophytes, the haploid generation alternates with diploid genetic known as _____
Alternation of generation

Bryophytes are more abundant in _____areas.
moist tropical

Bryophyte is mostly divided into _____ and mosses.
liverworts

Bryophyte is mostly divided into liverworts and_____.
mosses

Bryophyte is mostly divided into_____ and_____.
Liverworts, mosses

_____ is divided into liverworts and mosses.
Bryophyte

The following are true of Liverworts

- Gametophytes usually are close to the ground.
- There are 2 forms of liverworts namely; thalloid liverworts (gametophyte) and is dorsi-ventral, with upper and lower surfaces.
- Leafy liverworts (differentiated into leaf-like and stem-like structures).
- Leaves of liverworts are without midribs.
- Grows on moist ground or rocks that are also wet

Marchantia and Riccia are examples of _____
Liverworts

The following are true of Mosses

- This is the largest class of Bryophytes.
- They are divided into three subclasses: Sphagnidae (Reat mosses) Andreaide rock mosses) and Bryidae (true mosses).

Funaria is an example of_____
Mosses

The following are the external features of Marchantia (Liverwort)

- Marchantia belongs to the family marchantiaceae.
- The gametophyte bears archegonia on vertical stalked receptacles called archegoniophore.
- It grows in cool moist places along with mosses and increases of burnt grounds.
- It is deep green in colour has a prominent midrib which is marked on the dorsal surface by a shallow groove and in the ventral surface by a low ridge covered with rhizoids.
- Marchantia is decorous.
- The thallus of Marchantia is anchored to the surface by rhizoids which are of smooth walled.
- Scales are also present on the ventral surface arranged on both side of the mid-rib.

Marchantia belongs to the family_____.
marchantiaceae

The gametophyte of Marchantia bears archegonia on vertical stalked receptacles called_____.
Archegoniophore

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Marchantia is deep _____ in colour
Green

Marchantia is decorous.
True

The thallus of Marchantia is anchored to the surface by _____ which are of smooth walled.
rhizoids

The thallus of Marchantia is anchored to the surface by rhizoids which are of _____walled.
Smooth

The external features or characteristics of Funaria (Mosses)

- Funaria is a very common moss and widely distributed throughout the world.
- The adult gametophyte is the most conspicuous form of the moist plant.
- It consist of a main erect axis bearing leaves which are arranged spirally
- The adult gametophyte is called gametophine and about 1-3 cm high.
- The leaves do not have a stalk but show a distinct midrib.
- The gametophore is attached to substratum by means of rhizoids.
- They are multicellular, branched and have oblique septae.
- The gametophyte bears sporophyte which has foot, seta and capsule.
- The gametophore develops from a filamentous, green short-lived protomenue.
- The protonema produces buds at certain stage of development which inhate development of upring leafy green axis, the gametophore.
- The species, Funaria hygrometrica is cosmopolitan and is the best know of all the mosses.

The adult gametophyte of Funaria is called_____
Gametophine

Gametophine is small and about _____ cm high.
1-3

The adaptation of Bryophytes

- Bryophytes are fixed to the soil by thread-like, small structures called Rhizoids.
- Rhizoids are unicellular and unbranched in liverworts but multicellular and branched in mosses.
- They fix the plant to the soil and absorb water and minerals from it.
- The hydroids transfer water from rhizoids to the leaves at the apex and the food conducting leptoids transport sucrose.
- In most other bryophytes, external capillary system takes care of the distribution of water to all parts of the plant body

Bryophytes are fixed to the soil by thread-like, small structures called_____.
Rhizoids

Bryophytes are fixed to the soil by _____ like, small structures called Rhizoids.
Thread

The _____ transfer water from rhizoids to the leaves at the apex and the food conducting leptoids transport sucrose.
hydroids

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The hydroids transfer water from rhizoids to the leaves at the apex and the food conducting leptoids transport_____.
Sucrose

The hydroids transfer _____ from rhizoids to the leaves at the apex and the food conducting leptoids transport sucrose.
Water

The hydroids transfer water from rhizoids to the leaves at the apex and the _____ conducting leptoids transport sucrose.
Food

_____ are unicellular and unbranched in liverworts but multicellular and branched in mosses.
Rhizoids

Rhizoids are unicellular and unbranched in _____but multicellular and branched in____.
Liverworts, mosses

Rhizoids are unicellular and unbranched in liverworts but multicellular and branched in mosses.
True

Liverworts (Marchantia) and Mosses (Funaria) are example of_____.
Bryophytes

_____ are commonly seen as house plants, in parks and also in house land scape along with ornamental plants.
Ferns

_____ are vascular plants and they posses root, stem and leaves.
Pteridophytes

Pteridophytes are vascular plants and they posses_____, stem and leaves.
root

Pteridophytes are vascular plants and they posses root, _____and leaves.
stem

Pteridophytes are vascular plants and they posses root, stem and_____.
leaves

The general characteristics of pteridophytes

- Pteridophytes have two distinct phases in the life cycle. These are Gametophyte and Sporophytes which follow each other in regular succession.
- The sporophyte is the dominant generation, independent of the gametophyte; it possesses a vascular system and it is in a different habitat
- Pteridophytes exhibit a great variation in form, size and structure
- Most are herbaceous except a few woody tree ferns
- They may be dorsi-ventral or radial in symmetry
- They have dichotomously or laterally branched stems that bear megaphyllous leaves.
- Roots are generally adventitious, the primary embryonic root being short-lived
- Spores are produced in special structures called the sporangia that are invariably subtended by life-like appendages known as sporophylls

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- In most cases, the sporangia are compacted to form distinct spore producing regions called the strobile.
- The leaves of a fern plant is called frond
- Pteridophytes, in general, are homophonous
- They form green, dorsiventrally differential, thallose gametophytes with sex organs restricted to the ventral surface
- The female reproductive structure is archegonium and the male reproductive structure is antheridium.

The following are the similarities between Pteridophytes and Bryophytes

- Liverworts and Pteridophytes show similarity in vegetative structure of gametophytes
- Their female and male reproductive structures are archegonium and antheridium, respectively
- The opening of the mature sexual reproductive organs and the subsequent fertilizations are condition by the presence of water in liquid salt
- They usually show a distinct and clearly defined heteromorphic alternative of generations and the two generations follow each other in regular succession
- The spores arise in the same manner in both groups.
- Development of embryo occurs in the archegonium
- The young sporophyte or embryo is partially parasitic upon the gametophyte

The following are the differences between Pteridophytes and Bryophytes

- In Pteridophytes, the sporophyte is independent at maturity and is the dominant phase of life cycle instead of gametophyte as in bryophytes
- The Sporophyte has true roots, stems, and leaves and well developed conducting tissues-xylem and phloem, which are absent in bryophytes
- Some of the Pteridophyte is heterosporous but all the bryophytes are homosporous.

Pteridophytes and Flowering Plants

- In Pteridophytes, plant body is not divided into root and shoots system, in flowering plants, plant body differentiated into distinct root and shoot system.
- Vascular bundles are less developed in Pteridophytes, (tracheids)
- Flowering plants has well developed vascular bundles (xylem and phloem).
- There is no pollen grain, pollen tube; in Pteridophytes following plant has pollen grain.
- Pteridophytes have no seeds (but sori) white flowering plants produce seeds with cotyledons or endosperms.

Morphology of a Pteridophyte–Pteris vittata

- Pteris is a widely distributed genus with about 250 species.
- It grows abundantly in cool, damp and shady places in tropical and subtropical regions of the world. Pteris Vittata is a low level fern which brings out new leaves throughout the year.
- It is very common along mountain walls and grows up to 1200 metres above sea level.
- All the species of pteris are terrestrial, perennial herbs with either creeping or semi erect rhizome covered by scales.
- Roots arise either from the lower surface or all over the surface of rhizome. Leaves are compound in most species, but a few have simple leaves eg. Pteris cretica.
- The stalk of leaf continues as rachis and bears leaflets called pinnae.
- In Pteris vittata, the pinnae present near the base are tips are smaller than those in the middle.

Seed plants are seed producing _____plants.
Vascular

Seed plants are also called____.

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Spermatophyte

The general characteristics of seed plants

- They are terrestrially adapted i.e they are land plants.
- The gametophytes of seed plants become more reduced and dependent on the sporophytes.
- They produce two types of spores (Megaspores and Microspores) ie. they are heterospores.
- They undergo pollution which replaces swimming as the mechanism for delivering sperm to egg. They produce seed.

Gymnosperms are generally classified into _____ divisions.
Four

Among the gymnospems, the _____ are the most important.
Conifers

The following are characteristics of Conifers

- They are cone bearing plants with vascular tissue.
- All are woody plants; the great majority been trees with just a few shrubs.
- Species can be found growing naturally in almost all parts of the world.
- They are frequently dominating plants in their habitats.
- They are of immense value, primarily for timber and paper production.
- The wood of conifers is known as softwood.

Examples of conifers are: Cedars, Cypresses, Pines, Redwoods etc.

The external morphology of Conifers

- All are wood plants, and most are trees
- Majority has a monopocal growth (ie. a single, straight trunk with side branches) with optical dominance
- Size varies from less than a metre, to over 100 meters
- They are the world largest, tallest and oldest living things

These are the ecological adaptation of conifer

- The have distinctly scented pesin, which is secreted to protect the tree against insect infestation and fungal infection of woods
- They maintain high rates of photosynthesis at relatively low temperature
- Their needles (leaves) have thick warty coatings and sunken stomatas which prevent excessive loss The sapwood column is large and acts as a short-term reservoir that supplies water to foliage during drought periods

The angiosperms are also known as_____.
flowering plants

The angiosperms are also known as _____ plants.
Flowering

Angiosperm are generally classified into _____
two

Angiosperm are generally classified into **Monocotyledons** and _____
Dicotyledons

Angiosperm are generally classified into _____ and _____

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Monocotyledons, Dicotyledons

The general features of Angiosperms include the follwowing

- They could be photoautotroph, saprobes or parasitic.
- Mostly pollinated by insects, birds, and other animals, while some are by wind
- They have vessels (xylem and phloem).

The monocots include lilies, grasses, corn, wheat, palms, while the dicots include roses, maples, oaks, peas, and beans.

The following are the terrestrial adaptation of vascular plant (seed plants)

- Possession of cuticle
- They do not need immediate aquatic habitat. Roots have no cuticle
- They are woody materials made of Cellulose and lignin
- Possession of vascular tissues (Xylem and Phloem)

An animal is either **vertebrate** or_____.
Invertebrate

The vertebral column is referred to as _____
backbone or spine

The animals which possess vertebral column are called _____
Vertebrates

Animals which do not have the vertebral column are called_____.
Invertebrates

The general characteristics of Invertebrates

- The Invertebrates animals abound in number very greatly, about 95 percent of the identified and described species of living species of animals are invertebrates.
- They vary in size, some are microscopic e.g. Protozoans, while others are enormously large, e.g. some giant cephalopods.
- Their shape is variable and they show different kinds of symmetry but considerable number is Asymmetrical as well.
- Except protozoa other invertebrate phyla shows multicellularity
- They show different grades of body-organization
- They integument of invertebrates is simple.
- The gut may be entirely absent, or partially formed or fully formed.
- Circulatory system, if present in invertebrates, may be open type, or closed type or combination of both.
- They show diversified excretory mechanisms, some takes place by general body surface, or by specialized cells as flame cells or
- They undergo different methods of reproduction such as fission, conjugation, parthenogenesis and gametic fusion.
- All invertebrate animals are cold-blooded.

All invertebrate animals are_____
cold-blooded

All invertebrate animals are cold-blooded.
True

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_____ refers to Unicellular or acellular animals of the microscopic size.
Protozoa

The simplest of all the groups in the animals' kingdom is _____
Phylum Protozoa

The name protozoa means "first animals" and has been derived from two Greek words, PROTOS, meaning first and zoon, meaning animal.

Greek word ''protos'' meaning _____
First

Greek word ''zoon'' means_____
Animal

The distinguishing features of the Phylum Protozoa

- The mode of life could be free-living or parasitic
- The presence of moisture in their environment is an essential condition for their mode of life
- Locomotry organs are finger – like Pseudopodia or whip-like Flagella or hair-like Cilia or absent. Meganucleus) eg. Paramecium
- Nutrition may be holozoic (animal-like), holophytic (Plant-like), Sapro-phylic or parasitic
- Respiration occurs through general surface of the body
- Excretion occurs through general surface or through contractile vacumes which also serve for osmo-regution
- Reproduction takes place asexually by binary or multiple fission and budding, and sexually by conjugation of the adults or female gametes
- Encystement commonly occurs to help in dispersal as well as to pass unfavourable condition

The classification of the Phylum Protozoa is based on _____ structure.
Locomotory

The classification of the Phylum _____ is based on locomotory structure.
Protozoa

The classification of the Phylum Protozoa is based on_____.
locomotory structure

The most common species of Amoeba is_____
Amoeba proteus

Amoeba proteus measures about 0.25 to 0.60mm in size

The organ of feeding in amoeba is called_____
pseudopodia

There is no specialized organelle in amoeba for throwing out the indigestible material.
True

The process whereby the carbondioxide leaving the protoplasm is exchange for oxygen entering it is known as_____
Respiration

Osmoregulation refers to the regulation of water content.

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The _____ is responsible for osmoregulation in amoeba
contractile vacuole

Asexual reproduction occur in amoeba by the following methods

- Binary Fission
- Sporulation
- Encystment

Protozoans are called _____organisms.
acellular or non-celluar

The classification of the Phylum Protozoan is based on _____
Locomotory structure

Amoeba and Paramecium are examples of the phylum_____.
protozoa

The _____ is responsible for the regulation of water content in protozoans.
contractile vacuole

The _____ contains types of cells which together form the Mesenchyme.
Mesoglea

The Mesoglea contains types of cells which together form the_____.
Mesenchyme

The sponges carry in reproduction by the following method:

- Regeneration
- Asexual reproduction
- Sexual reproduction

Leucosolenia is an example of_____.
Sponges

Spronges are aquatic invertebrate.
True

Phylum Coelenterata comprises of the following classes

- Class Hydrozoa
- Class Scyphozoa
- Class Cubozoa
- Class Anthozoa

The characteristic features of coelenterates

- All are aquatic animals
- They are radially or biradally symmetrical
- They diploblastic, with an epidermis and a gastrodermis, and a less cellular or non-cellular, gelatinous mesoglea in between
- They have no coelom or separate excretory or respiratory system
- Two individual forms of coelenterate exist: polyps and medusa

The two forms of individuals in phylum Coelenterata are **Polyp** and _____
Medusa

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The medusa and polyp are forms individuals in the phylum_____
Coelenterate

_____ is tubular, the oral end being free carrying a whorl of tentacles, and the aboral end attached to the sub stratum by the basal disc.
Polyp

The _____ is the free swimming umbrella-like pelagic form with mouth at the end of the manubrium on the subumbrellar side.
Medusa

Coelenterates are divided into _____classes
Four

Phylum Coelenterata is divided into the following classes

- Hydrozoa
- Scyphozoan
- Cubozoa
- Anthozoa

The following are the features of the Class Hydrozoa

- They may be solitary or colonial forms
- There are asexual polyps and sexual medusae, though one type may be suppressed
- Animals may be either fresh water or marine

The following are the features of the Class Cubozoa

- They are solitary medusoid forms
- They have reduced polyp stage
- Medusa is square in cross section

The following are the features of the Class Anthozoa

- All are polyps
- They are solitary or colonial
- Gonads are gastrodermal
- All are marine

The following are adaptive features of Hydra

- Foots secretes a sticky substance for anchorage and lcoomotion
- Interstitial cells which is chief agent in regeneration, repairs, budding and reconstructing tissues in growth
- Nematoblast helps in defence
- Hydra usually remains attached by its basal disc or foot to objects under water
- The movement of hydra are for: the capture of the prey; response to stimuli; locomotion
- Swimming is facilitated by the wave-like movement of the tentacles
- Hydra is a Carnivorous animal
- Egestion is through the mouth
- Gaseous exchange is made by almost direct diffusion through the cell membrane to the surrounding water

The General Characteristic Features of the Phylum Platyhelminthes

- They are bilaterally symmetrical Their body are dorsiventrally flattened; known as flatworms Triploblastic animals – made up of three body layers

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- They lack body cavity hence called Acoelomate
- They have complete reproductive organs
- Digestive system is absent in some; and when present has only the mouth but no anus
- Nervous system are ladder-like, with simple sense organs
- They have no respiratory, circulatory or skeletal system
- They have a proto-nephridial type of excretory system.

The phylum platyhelminthes is classified into _____ classes.
Three

The phylum platyhelminthes is classified into three main classes.

The following are the characteristics of the classs Cestoda
- They are endoparasites (internal parasites), having no gut (digestive) system.
- There are parasites in the digestive tracts of various vertebrates.
- They are Ribbon – like in form made up of many segments (proglottids) with an anterior scolex carrying suckers and hooks to hest tissues.
- When mature, each prolothic has a complete set of reproductive organs of both sexes.

Sheep Liver–Fluke is called_____
Fasciola Hepatica

Fasciola hepatica requires _____ hosts to complete its life-cycle
Two

The External Morphology of Fasciola hepatica
- Hepatice Body is soft and Pinkish – brown in colour
- Elongated and dorso – ventrally flattened (leaf-like)
- Appear to be oral in shape, measuring 1.8 – 3 cm in length and 0.4 – 1.5 cm in width.
- Broad and rounded at the anterior end of the body; and bluntly pointed at the posterior end.
- The anterior sucker acts as a auctorial organ for adhesion and ingestion.
- Has a muscular bowel – like ventral or posterior sucker which is for adhesion only
- Body has a minute gonopore or genital aperture mid-ventrally which is little in fruit of the posterior sucker.
- Anus is absent

The following are the structural adaptation of Fasciola hepatica
- It sucks bite, blood, lymph etc. as food in its alimentary canal due to suctorial pharynx.
- It has prolonephridial type of excretory system, which is composed of large number of excretory cells called flame cell.
- The excretory substances collected in the human of the flame cell are pushed into excretory capillaries and tubules due to vibration of cilia of the flame cells.
- It respires by general body surface.
- It is a hermaphrodite.

The platyhelminthes are triploblastic animals
True

Fascule hepatica also known as _____
liver-fluke

A tremtoda belongs to the phylum _____
Platyhelminthes

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The adult fascule hepatic lives in the liver and bile passages of the primary host _____
Sheep

Platyhelminthes lack body cavity Platyhelminthes are classified into **Turbellaris**, **Trematoda** and _____
Cestoda

_____ are popularly known as roundworm.
Aschelminthes

Aschelminthes are popularly known as_____.
roundworm

Aschelminthes are a highly successful group of animal with about _____ species known.
12,000

The characteristic features of Aschelminthes

- They are bilaterally symmetrical
- Have circular cross sectional area
- They have complex cuticle
- Tissues and organs re present, and body has more than two hair cell-layers
- Circular muscles are absent in the body wall Body cavity is pseudocoel, with body at high pressure Gut (digestive system) extending from the mouth at the anterior and to anus Muscles of the body wall are with peculiar features
- They have no circulatory system, flame cells or nephridia.
- Have no cilia or flagella
- These development is direct, with highly determinate type of cleavage
- Growth in Aschelminthes involves increase in cell-size rather than cell number

The phylum Aschelminthes is divided into _____ classes
Five

The phylum Aschelminthes is divided into the following classes

- Rotifera
- Gastrotricha
- Echinodera
- Priapulide
- Nematode

Roundworm Ascans Lumbricoides is a parasite in the _____ of man
Intestine

The phylum Aschelminthes are commonly known as_____.
Nematodes

Aschelminthes are mostly _____ symmetrical
bilaterally

Aschelminthes can be clarified into **Rotifera**, **Gstrotricha**, **Echinodera**, **Priapulida** and_____.
Nematoda

Ascans Lumbricoides are parasitic in the intestine of _____
Man

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Earthworms, Neanthes and Leeches belong to the phylum_____
Annelida

The characteristic features of the Phylum Annelida

- They are mostly aquatic, some are terrestrial
- They are generally burning animals, some are sedentary or free living, and some are ectoparasites. The body is vermiform, bilaterally symmetrical, and metamerically segmented
- They have straight tube alimentary canal, and undergo extra-cellular digestion.
- Has segmentally arranged Locomotory organs, repeated groups of chitinous setae or chaetae. Leaches have no setae
- Respiration is generally through body surface or through a special projection of parapods.
- Has well developed closed type blood vascular system
- Possesses Nephridia which is the excretory organs
- Nervous system consists of paired cerebral ganglia or brain, a double ventral nerve cord bearing segmental ganglia
- Gonads develop from the coelomic epithelium
- Sex may be separate or united, and development may be direct or indirect.

The Phylum Annelida is generally divided into _____ classes.
Three

The following classes belong to the Phylum Annelids

- Polychaeta
- Oligochaeta
- Hirundea

The characteristic features of the Polychaeta

- Mostly marine forms
- Distinct head with eyes and tentacles
- Segmental with laterial projection of the body wall known as parapodia
- Do not have clitellum
- Sexes are separate
- Have no distinct or permanent sex organs
- Many forms reproduce asexually by budding

The characteristic features of the Oligochaeta

- Lives in soil or in fresh water
- Body is conspicuously segmented but no distinct head
- Parapodia absent
- They are hermaphrodites
- Has more complicated reproductive system with compact ovaries and testes but fewer in number clitellum is present
- No larva and development is direct

Earthworm belongs to the class_____
Oligochaeta

The characteristic features of the Hirundea

- Hirundea has fixed body segments numbering 34
- Some group may have only 31 or 17 segments
- Anterior and posterior sucker present

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- Clitellum is present
- No parapodia or setae
- They are hermaphrodites
- has direct development
- may be terrestrial fresh water or marine

Leeches belong to the class_____
Hirundea

The external features of earthworm
- Body is elongated nearly cylindrical and tapering at both the ends
- Mature Earthworm measures 150mm in length and 3-5 mm in width
- It is rich brown in colour, the dorsal surface darker than the ventral
- The metameric organization of the body is clearly indicated on the outside by the circular groves corresponding to body segments or metameres
- The first segment where the mouth is situated is called peristonium
- The preistomium projects forward a small sensory tube at the dorsal side which is known as Prostomium
- In a mature worm there is the Clitellum lying about 20mm behind the anterior extremity, plays an important part in its reproduction
- About the middle of each segment is a ring of Chitinous structures called Setae
- The first, the last and the three segments of the clitellar regions are without setae.
- A single female generative or oviduct aperture is present on the 14th segment in level with the surface of the Clitellum, seen as a light coloured patch
- The paired male generative or spermiducal apertures lie on the ventral surface of the 18th segment. The genital or copulatory papillae are in the 17th and 18th segments.

In earthworm, the first, the last and the three segments of the clitellar regions are without setae.
True

In earthworm, the middle of each segment is a ring of Chitinous structures called _____
Setae

In earthworm, the first segment where the mouth is situated is called _____
Peristonium

In earthworm, the preistomium projects forward a small sensory tube at the dorsal side which is known as_____.
Prostomium

In a mature worm there is the Clitellum lying about _____ mm behind the anterior extremity
20

The structural adaptation of earthworm
- The body wall forms a protective covering for all the enclosed internal parts
- The mucus in the epidermis underlying the body wall keeps the skin of the earthworm slimy and clean and does not carry any foreign germs to settle in it
- The body wall serves as the only organ of respiration because of its thin pervious and highly vascularised nature
- The skin serves as an efficient receptor organ
- Mucus act as a cement for plastering the walls of the burrow
- The setae aid in locomotion

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- The earthworm feeds in decaying leaves and humus present in the soil
- The Earthworm excretes waste products with the aid of an organ known as Nephridia.

The Earthworm excretes waste products with the aid of an organ known as_____
Nephridia

The Earthworm excretes _____ with the aid of Nephridia.
Waste products

The _____ excretes waste products with the aid of an organ known as Nephridia.
Earthworm

The habits and habitat the Earthworm

- Earthworms are found is nearly all parts of the world
- They eat their way through the ground and form burrows which they inhabit
- They form burrows by merely pushing in the body especially in soft soil their habit of swallowing soil also aids in the making of burrows especially in the compact soil.
- Soil containing organic matter is digested and absorbed as food and the residual soil is ejected in a form known as CASTING
- Earthworms exude a liquid which is antiseptic and protects the worm from any harmful bacterial that may be present in the soil or settle down on the body of the animal
- Burrows of the earthworm are usually 30-60cm deep and may be partly lined with dead leaves
- At the bottom of burrows, there is an enlargement where the worm can turn round and on top, the creature sometimes draws over the opening of some small pebbles for the purpose of keeping out water and enemies like centipede.

Earthworms are found is nearly all parts of the world
True

In earthworms, soil containing organic matter is digested and absorbed as food and the residual soil is ejected in a form known as _____
Casting

_____ of the earthworm are usually 30-60cm deep and may be partly lined with dead leaves.
Burrows

Burrows of the earthworm are_____ cm deep and may be partly lined with dead leaves.
30-60 cm

Burrows of the earthworm are usually 30-60cm deep and may be partly lined with _____ leaves.
Dead

The earthworm belongs to the phylum_____
Annelida

The phylum _____ is the first coelomate (cavity-lined) phylum
Annelida

Annelids are generally divided into three classes: Polychaeta, Oligochaeta, and _____
Hirundea

Earthworm is a typical example of an _____
annelid

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The characteristic features of the Phylum Mollusca

- They are bilaterally symmetrical
- Generally there is a distinct head and a muscular foot
- The dorsal body wall forms the mantle folds which enclose the mantle only.
- Uses gills and lungs for respiration
- A hard, calcareous shell secreted by mantle, protecting the body is common
- They have soft unsegmented bodies consisting of head, viscera mass and foot.

The following classes belong to the Phylum Mollusca

- Class pelecypoda or Bivalea
- Class Cephalopoda
- Class Gastropoda

Oysters, clams, and mussels belong to the class_____
Bivalea

Octopus, nautilus, cuttefish and squids belong to the class_____
Cephalopoda

Snail belongs to the phylum_____
Mollusca

The largest class of the phylum mollusca is the class_____
gastropoda

Snail belongs to the class_____
gastropoda

The adaptation of gastropoda to their environment

- Their foot is a flat creeping sole
- Ciliated and the glad cells located in the foot secrete mucus over which the animal moves (Locomotion)
- In burrowing forms, the foot acts like a plough and anchor limpets, slipper snails are adapted for clinging to rocks and shells
- In a group of pelagic gastropods (sea-butter fish), the foot is modified into effective fun-like swimming organs
- The land snails among gastropod have their mantle highly vascularized and converted limbs a lung for purposes of gas exchange
- Gastropods exhibit a variety of feeding habits
- There are herbivores, carnivores, scavengers, parasites
- Gastropods may be hermaphrodites or dioecious
- Fertilization is mostly internal
- Fertilized eggs may sometimes be enclosed in egg capsules

In the class gastropoda (snails), visceral mass undergoes a 90 to 180 degree twist with respect to head and foot, a phenomenon known as_____.
Torsion

The Phylum _____ is the largest group of the animal Kingdom
Arthropoda

The Phylum Arthropoda is the largest group of the animal Kingdom containing over _____ species.

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700,000

The general characteristic features of the phylum arthropoda

- The body is usually segmented and bilaterally symmetrical
- Segments are fused to form head, thorax and abdomen
- Majority of the segments bear a pair of jointed appendages each
- A hardened, non-living exoskeleton containing chitin in secreted by the epidermis; it is periodically moulted as long as the animal continues to grow in size
- There is usually a highly developed muscular system, with numerous separate muscles, composed of finely striated and quickly contracting fibers
- The digestive tract is complete; the mouth parts are provided with lateral jaws, the mouth parts may be adapted for chewing or for piercing and sucking liquid food
- The cilia and flagella are absent
- The circulatory system is of 'open' type; the heart is dorsal, distributing blood by artery to organs and tissues, from where it returns through the body spaces (haemocoels) to the heart
- The coelom is greatly reduced
- The nervous system is of the annelidan type, consisting of paired dorsal ganglia over the mouth, a ring or collar round the gullet and a ventral chain of ganglia
- The sexes are usually separate and the male and female are easily distinguishable
- Fertilization is internal and most arthropods undergo a more or less extensive meta

Crabs, prawns and lobsters belong to the class_____
Crustacean

Grasshopper, cockroach and housefly belong to the class_____
Insecta

Spiders, scorpions, mites and ticks belong to the class_____
Arachnida

Centipedes and millipede belong to the class_____
Myriapoda

About _____ % of all known species of animals are insects.
70

About 70% of all known species of animals are_____.
Insects

An insect carries out gaseous exchange by means of a network called_____
Tracheae

An _____ carries out gaseous exchange by means of a network of open airtubes or tracheae inside its body.
Insect

The tracheae inside an insect body have openings called_____ to the exterior.
Spiracles

_____ live in cracks and crevices in the walls.
Cockroaches

The Cockroaches are _____ insects.

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Nocturnal

The habitat and habit of a Cockroach

- It is abundant in storehouses, restaurants, kitchens, bakeries, boilers and other situations where there is warmth, dampness and organic food.
- Cockroaches live in cracks and crevices in the walls.
- The Cockroaches are nocturnal insects.
- During day time they remain inactive in their hiding places.
- They are omnivorous and devour any vegetable or animal substance
- They may eat even non-living materials such as leather, paper and cloth
- Cockroaches are cursorial

An Arachnid has a body divided into two parts: **cephalothorax** and_____.
Abdomen

In an_____, the cephalothorax bears simple eyes, two pairs of appendages for feeding and four pairs of walking legs.
Arachnid

In an Arachnid, the _____bears simple eyes, two pairs of appendages for feeding and four pairs of walking legs.
cephalothorax

The Phylum Arthropods which means_____
Animals with jointed legs

The _____ constitute largest group in the animal kingdom.
Arthropods

The arthropods can be classified into Crustaean, Insects, Myriapods and_____.
Arachnids

Cockroaches belong to the class_____
Insect

Spiders belong to the class_____
Arachnida

The body of insect is divided into_____ parts
3

The body of insect is divided into three parts_____
heads, thorax and abdomen

Arthropod has _____limbs.
jointed

Arthropods possess _____ which prevents them against water loss for the terrestrial arthropods and predators.
Exoskeleton

The characteristic features of the phylum echinodermata

- All Echinoderms are marine animals, and the adults are mostly with Pentamerous radial symmetry (ie can be divided into 5 equal parts).

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- Body is not metamerically segmented
- Could be rounded, cylindrical or star shaped without head.
- They have no brain, only few specialized sense organs
- They have a complete digestive system
- Locomotive is mainly by tube feet, in some by means of spines or by movement of arms
- They have no olfactory organs
- Sexes are separate, fertilization is external
- They have indeterminate type of development
- Respiration is by dermal branchiae, tube feet or respiratory trees
- They have an internal skeleton (endoskeleton) made up of plates of calcium carbonate, imbedded in the body wall.

The Phylum Echinodermata includes five classes. They are:
a. Class Asteroidea e.g. Star Fishes
b. Class Opliuroidea e.g. Brittle Stars
c. Class Echinoidea e.g. Sea Urchiris
d. Class Holothuroidea e.g. Sea-Cucumbers
e. Class Crinoides e.g. Sea Lilies

The Vertebrata is a subphylum of the Phylum_____.
Chordata

The following are the characteristics of the subphylum Vertebrta
- A bilaterally symmetrical body, divided into a head, a trunk and a tail.
- In Most vertebrates, a neck joins the head to the trunk.
- An internal skeleton or endoskeleton of bone and cartilage, with a backbone or vertebral column made up of a series of small bones called vertebrae.
- A well-developed central nervous system with a brain (within a brain case) and a spinal chord (dorsal position). Well-developed sense organs.
- A 'closed' blood system made up of a muscular heart (ventral position).
- Two pairs of limbs (tetrapods.) Kidneys for eliminating body wastes.
- Skin may be naked or have a covering of scales, feathers or hairs.
- Vertebrates are divided into five classes

The vertebrates are divided into _____classes
Five

The classes of vertebrates include the following
- Pisces
- Amphibia
- Reptilia
- Aves
- Mammalia

The following are the characteristics of Pisces (Fishes)
- Fishes are all aquatic
- The jawless fishes like the hagfish and lamprey are the most primitive.
- They have sucker-like mouths and no paired fins.
- The cartilaginous fishes like sharks, skates and rays have jaws and paired fins, but their skeletons are made of cartilage like the jawless fishes.
- It is a cold-blooded (poikilothermic) animal
- Its body is covered with scales (absent in jawless fishes) and a layer of slime.
- It has fins.

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- It carries out gaseous exchange by gills.
- It only has inner ears.
- It has a two-chambered heart.
- Fertilization is usually external.

Pisces have a _____ chambered heart.
two

In fishes, fertilization is usually_____.
external

Pisces carries out gaseous exchange by _____
Gills

Water is a denser medium than air.
True
_____ are the most successful aquatic organisms.
Bony fishes

Aquatic organisms that move actively use _____ like fins which are modified for swimming.
Appendages

Aquatic organisms that move actively use appendages like fins which are modified for_____.
Swimming

The fish show the following structural adaptations to life in water.
- Have a streamlined body shape without a neck that enables them to move easily through water.
- The tail and tail fin of a fish are special adaptive structures for swimming.
- Gills are gaseous exchange organs that are adapted for an aquatic environment.

Vertebrates are _____ symmetrical
Bilaterally

The _____ made the first transition from the aquatic to the terrestrial mode of life
Amphibians

The frogs, toads, newts and salamanders are examples_____
Amphibians

The characteristics features of Amphibians
- It is cold-blooded
- It has paired fore-and hind limbs in the adult stage
- It has a naked, moist skin
- It has a sticky tongue which can be protruded and retracted quickly
- It has inner and middle ears
- It carries out gaseous exchange by gills, lungs, skin or mouth lining, separately or in combination.
- Gills are present at some stage in its life cycle
- It has a three-chambered heart
- Fertilization is external
- The eggs are small
- An aquatic larval stage is usually present

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These are the adaptive features of the amphibians

- Skin secretes substances that scare away enemies (other animals) e.g. Snakes from attack.
- The tongue is an insect-catching apparatus which aids feeding.
- Have five (5) fingered limbs for locomotion.
- Has webbed feet for swimming Has powerful hind –legs for jumping/leaping.
- Soft, moist skin for skin or cutaneous respiration.
- The young ones, tadpoles lives in water and breathe by gills.
- The tadpoles have a streamline body.
- The tadpole has a fin-like tail that aids swimming
- Adults breathe by lungs hence can live in land and water.

_____ are the largest group of amphibians.
Frogs and toads

Frogs and Toads are the largest group of_____.
Amphibians

The young amphibians are known as _____
Tadpoles

The adult amphibians have _____ for breathing.
lungs

The adult amphibians have lungs for_____.
breathing

Amphibians have stout bodies with powerful hind legs for_____.
leaping or jumping

Amphibians are _____animals.
cold-blooded

Amphibians have five fingered limbs with webbed feet used for_____.
Swimming

_____ are the first group of vertebrates to have become completely adapted to life on land.
Reptiles

There are _____ main groups of reptiles
Four

There are four main groups of reptiles namely: Lizards, snakes, crocodiles and_____.
Turtles

In reptiles, the embryo always lies in a fluid-filled sac known as_____
Amnion

The following are the adaptive features of reptiles

- They are cold blooded animals
- Has a well developed tongue which can be protruded and retracted quickly
- Its jaws have teeth of the same kind embedded in sockets
- It usually has paired fore and hind limbs each with five toes ending in claws

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- It has inner and middle ears
- It has a skin that is covered with scales
- It carries out gaseous exchange through its lungs
- Fertilization is internal

A phenomenon in which lizards possess the power to break off their tail automatically and grow new tails in due course of time is called_____
Autonomy

_____ are the lowest vertebrates which are truly terrestrial
Reptiles

Aves have a _____ chambered heart.
Four

The head of a bird is small and_____
rounded

Swimming birds like ducks have webbed feet which serve as_____
Paddles

The general characteristics features of birds

- The body of the birds is steamlined or spindle-shaped well adapted for aerial life.
- The neck is usually long and flexible.
- The head is rounded and the facial portion is produced into beak.
- Close to the base of the beak are two slit-like nostrils.
- Each eye is provided with three eyelids
- Three toes are directed forwards and one backwards.
- They have very long toes.

The body of _____is covered with soft feathers.
birds

The body of birds is covered with _____feathers.
soft

The _____ of birds is covered with soft feathers.
body

The body of birds is covered with soft_____.
feathers

The fore limbs of birds are modified to form_____.
Wings

The body of the birds is streamlined or _____shaped.
Spindle

The body of the birds is _____or spindle shaped
streamlined

The _____ limbs of birds are adapted for bearing the entire weight of the body when walking
hind

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The hind-limbs of birds are adapted for bearing the entire _____ of the body when walking.
weight

The hind-limbs of birds are adapted for bearing the entire weight of the body when_____.
walking

The main characteristics of a mammal are as follows:

- It is warm-blooded. Its skin has sweat and sebaceous glands and a covering of hairs.
- It has different types of teeth, with each type carrying out a specific function.
- It has external ears called pinnae.
- Its body cavity is separated into two by a muscular sheet called a diaphragm.
- The upper thoracic cavity contains the lungs and the heart while the lower abdominal cavity contains the alimentary canal, the Kidneys and the reproductive organs.
- It has a well-developed heart.
- It has a well-developed brain.
- Fertilization is internal.

Mammals have external ears called_____.
Pinnae

Mammals have _____ chambered heart
Four

In mammals, the body cavity is separated into two by a muscular sheet called a _____.
Diaphragm

The caspids are made up of identical repeating subunits called _____
Casomeres

A tissue responsible for secondary growth in plants is called_____
Cambium

The flower parts in dicot is usually in four while in monocot is in _____
Three

Diatoms belong to the group of algae called_____
Bacillariophyta

Which of the cells in Hydra is for absorption and digestion of food?
Glandular cells

In viruses, there is a protective coat called_____ around the nucleic core
Capsid

The virus that causes HIV is called _____
human immunodeficiency virus

A short unicellular organ of attachment found in some spirogyra is called _____
Hapteron

In the class Turbellaria_____ are rarely present
Suckers

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The main diagnostic feature of round worm is that it is _____ at both ends
Elongated

Under the highest magnification of light microscope, the smallest bacterium is about 0005 micrometers across while the largest may be up to _____micrometers long
0.02

_____ segmentation is the transverse division of the body into similar parts
Metameric

What is the role of cell membrane in bacteria and other organisms?
It controls what goes in and out of the cell

Viruses that cause tomato and tobacco mosaic have molecular weight of 60 to 100 million. The molecular weight of viruses that cause fowl plague have a molecular weight of _____ to _____
200 to 400 million

_____ includes all those eukaryotes that are considered as ancestors of plants, animals and fungi
Protoctista

Members of fungi either live as saprophytes or _____
Parasites

The group of plants which are not differentiated into roots, stems and leaves is called _____
Thallophyta

_____ are disease causing organisms which are specific to their host.
Viruses

The organelle in the cell that contains a mixture of water, salts, small organic compounds and micromolecules of many kinds is called _____
Cytoplasmic matrix

_____ is a structure in the plant cell that contains aqueous solution of mineral salts which regulate the turgidity of adjoining cytoplasm.
vacuole

A common example of fungi whose mycelium can produce both plus and minus is _____
Neurospora

Other name for shield in arthropods is_____
Carapace

The phylum _____ is the largest in terms of number of animal species
Arthropoda

The immunodeficiency virus belongs to the group of RNA viruses known as_____
Retroviruses

Some bacteria without cell wall and can change their shape are called _____
Mycoplasmas

A coating on the outside of cell wall with a definite boundary in some bacteria is called_____ layer
Slime

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The group of plants though live on land but still dependent on water for completion of their life cycle is_____
Bryophytes

The _____ are the simplest form of land plants
Bryophytes

Organisms can only use two forms of energy, either chemical or_____
light

A covering of insect body that has a great influence on growth is called_____
Chitin

The vascular tissue in Pteridophyte is found in _____ generation
sporophyte

The group of plants which usually produce cones on which sporangia ,spores and seeds develop is called _____
Conifers

One of the challenges of _____ reproduction is how to get the non-motile gametes to reach the female gametes.
Angiosperm

The _____ are known as vascular plants.
Tracheophytes

In the phylum Rhizopoda, the _____ have naked surface without differentiation
Sarcodinians

The cell that is for capturing Hydra small animal food is called _____
Stunging cells

Which of the following is not a characteristic of Anelids?
They are not bilaterally symmetrical

Which of these is not a class of Anelids?
Entamelochaeta

The following are members of Anelids except
Planeria

The characteristics of arthropods include the following except
Coelom highly developed

Which of these is not a class of the phylum arthropoda?
Polychaeta

Arthropods are placed in the various classes on the bases of the following except
Number of segments

What is the number of segments in Centipede?
Between 15 to 20

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Which of these triploblastic coelomates is unsegmented?
Molluscs

Which of these is not a class of vertebrates?
Gastropod

The part of mammalian skin which contains pigment for skin colour is called _____
Malpighian layer

Which of these statements is not correct about Paramecium?
Oral groove and gullet are covered with flagella

Which of these of organisms is not a protozoa?
Cnidaria

Amoeba belongs to the phylum _____
Rhizopoda

Sporozoa is in the phylum of_____
Apicomplexa

An average size of Amoeba is_____
0.02cm

The food substance of Amoeba are usually _____
Diatoms

Under which kingdom are bacteria classified?
Monera

Which of the following phyla contain parasites?
Apicomplexa

Which of these is not a characteristics of the members of Porifera?
Their body is symmetrical

The following structures are part of reproduction in Porifera except
Collar cells

Which of these statements is not true about Sponges?
Their cells are highly specialised

What is the role of mesogloea in Cnidaria?
Separate ectoderm from endoderm

A good example of Cnidaria is_____
Hydra

The stinging cells in Hydra that help to capture food organisms is called_____
Nematocysts cells

Which of these groups of animals is the first to develop the organ system level of organization?
Platyhelminthes

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Which of these is not a characteristic of platyhelminthes?
Biploblastic

Which of these organisms is a member of Cestoda?
Taenia

Nematodes possesses the following characteristics except
The digestive canal is open at one end

Nematodes are like platyhelminthes in the following ways except in
They are both segmented

The crustacean with wider thoracic and short abdomen is _____
Crab

The appendage in the crayfish which branched into a pair of ponted chitinous structure is called_____
1st Abdominal

The serrated edge for gripping in crab is called_____
Thoracic appendages

If you are presented with an arthropod with the following features- head made up of six segments fused together, a pair of antennae and a pair of lateral compound eye such arthropod is_____
Insect

Which of the following is not a characteristic of Diplopoda?
A pair of legs in each segment

Cold blooded animals also known as ____animal
Poikilothermic

Which group of animal made the first transistion from aquatic to the terrestrial mood of life?
Amphibian

Which of these is an example of a bony fish?
Carp

Which of these does the fish use in detecting movement and change in water pressure?
Lateral line

Which of these is an example of jawless fish?
Lamprey

Which of the following has naked moist skin?
Amphibian

The head is small and rounded whole body oval and stream-lined. These description best describe?
bird

Which of these is not an amphibian?
Skates

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Which of the following is not an example of a cartilaginous fish?
Tilapia

The Hinds limbs of_____ have clawed digits modified for walking, perching, hopping, running or swimming
Aves

How many units are in the module 2 of BIO 102?
5 Units

Nomenclature in biology is a binomial system following the work of _____
Carl Linnaeus

The sub-phylum vertebrata is made up of how many classes?
6

The classification that includes both internal and external features is_____
Natural classification

The use of computer in the classification of organisms is called_____
Numerical taxonomy

The average size of cell of prokaryotes in diameter is _____
0.5 - 10 milimicron

_____ is a nitrogen containing polysaccharide
Chitin

Evolutionally, autotrophic eukaryotes arrived on earth only_____ years ago
420 million

The simplest form of identification key is_____
Dichotomous key

The protective coat around the core of virus is called_____
Capsid

Viruses that attack bacteria are called _____
Bacteriophages

HIV virus belong to the group of RNA viruses known as _____
Retroviruses

The coating on the outside wall of bacteria is called _____
Slime layer

The cell wall in some bacteria is strong and rigid because of the presence of _____
Murein

The pigment found in blue-green bacteria is called_____
Phycocyanin

The cells that are developed in Anabaena when there is shortage of nitrogen is called_____

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Heterocysts

_____ is a body that is not differentiated into true root, stem and leaf.
Thaloid

The photosynthetic pigments in phaeophyta is _____
Fucoxanthin

The colourless patches on the spiral chloroplast in Spirigyra is called_____
Pyrenoids

The two classes of bryophytes are _____
Liverworts and Mosses

The sorus is covered with _____
Indusium

The structure in dicot plant that is responsible for secondary growth is called_____
Cambium

The oral groove and gullet in *Paramecium* are lined with_____
Cilia

The sponge's skeleton is made up of fibrous organic substances called_____
Sponging

_____ are responsible for forming the gemmules in Sponges
Archeocytes

The common name of *Fasciola is*_____
Liver fluke

The group of worms that are not segmented, taperat either ends and have no blood system are called_____
Nematodes

_____ is very important to man because of their burrowing activities in the soil
Earth worm

The projections on each of the segment of Nereis with which it paddles through the water is called_____
Parapodia

More than three quarters of known animal species are_____
Arthropods

The exoskeleton in arthropods is secreted by the_____
Epidermis

The shield in Crustacea is called _____
Carapace

The Crustaceans in which their exoskeleton is converted into heavy armour by impregnation of salts are called_____

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Decapods

How many pairs of thoracic appendages are found in Lobsters?
6

What is the function of the 1st Abdominal part of Crayfish and Lobster?
It is for transferring of sperm into the female-mating

How many study units are in the course BIO102 (General Biology II)?
25 units

Which of these is not part of BIO102?
Distribution of organisms

Which of the following is not the aim of BIO 102?
Explanation of the roles of organisms in their environment

The objectives of BIO 102 include the following except
Comparison of organisms and their environment

How many modules are in BIO102?
5

Which of these groups of organisms is not in module 4 of BIO102?
Nematodes

Which of the following is not an objective of study of classification and characteristics of organisms?
To be able to study every organism

In which year was the five kingdom classification proposed?
1982

Organisms that are heterotrophic, digest food externally before absorbing the products belong to which system of classification?
Fungi

Which of these statements is not correct about viruses?
They contain both RNA and DNA

Evolutionary origin of prokaryotes was traced back to_____
3.5 million years ago

Which of these organisms is not a protoctist?
Pinus

Which of these is not a characteristic of fungi?
They store carbohydrate in form of starch

Which of the following is not an example of the phylum Ascomycota?
Rhizopus

Which of the following is not a characteristic of the phylum Porifera?
They are tripoblastic

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Which phylum of animal is referred to as segmented worms?
Annelida

The following can be found in the protective coat of virus except
Nitrocaspid

Which of these is not true about HIV?
It can change its DNA to RNA

The largest bacteria may be about_____ micrometers across
0.02

Which of these is not used for the classification of bacteria?
Environment found

The surface to volume ratio in Amoeba can be as low as_____
400

When the condition is favourable, a bacterium can divides once in every_____
Fifteen minutes

Based on the acquisition of energy by bacteria, they can be placed in to how many basic groups?
3

Theordor Schwann who discovered cell was a_____
Physiologist

The number of cells in the body of man is roughly estimated to be the number of seconds in_____
950,000 years

Which of these is not one of the compositions of cytoplasmic matrix?
Protein

Which of these is a liverwort??
Pellia

Fucus is differentiated into the following except
Leaf

The flower parts in dicots are usually in_____
Fours and fives

Plasmodium is in the phylum _____
Apicomplexa

The epidermis of Hydra is made up of the following cells except
Nerve cells

The cells that coordinate the network of other cells in Hydra are called_____
Nerve cells

Which of these statements is not true about Platyhelminthes?
They are segmented

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The present method of classifying and naming living organisms is based on the work of?
Linnaeus

Which class of algae is Chlamydomonas found?
Chlorophyta

Spirogyra is often referred to as_____
Pond scum

Oedogonium can be found in _____habitat.
Freshwater

What division of plant is Funaria placed?
Bryophyta

The simple green plants are called_____
Bryophyte

An example of unicellular algae is_____
Anacystis

Aranchnid breathes by the means of_____
Trachea

The organelle that helps in defence in Hydra is called _____
Nematoblast

The common name for Schistosoma is_____
Blood fluke

Liver fluke are hermaphroditic.
True

Growth in Aschelminthes involves increase in cell size rather than?
Cell number

What type of sexual dimorphism is in Earthworms?
Monoecious

The excretory organ of earthworm is_____
Nephridia

Fertilization in gastropod is mostly_____
Internal

What class of arthropod does Spider belongs?
Arachnida

In term of temperature regulation, Fishes are called_____
Poikilothermic

The caspids are made up of identical repeating subunits called _____
Casomeres

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The anuran that is terrestrial, nocturnal in habits and does not possess teeth is_____
Toad

The ordinary wall lizard is called_____
Geckos

Birds only secretion is used for _____feathers.
Preening

The phenomena in mammals where the young is born alive is called_____
Vivipary

Which mammal trunk consist of a narrow chest?
Rabbit

The bird with short blunt but strong beak for cracking open seeds is_____
Bull finch

Algae are firmly attached to the underlying rocks by means of_____
Holdfast

The adult Funaria gametophytes is called_____
Gametophine

In pteridophytes vascular tissue are developed only in the _____
Sporophytes

The wood of conifer is known as_____
Softwood

The flagellated collar cells in sponges is called_____
Choanocytes

Obelia is an example of coelenterate in the class?
Hydrozoa

Which of the cells in Hydra is for absorption and digestion of food?
Glandular cells

The main diagnostic feature of round worm is that it is _____ at both ends.
Elongated

_____ includes all those eukaryotes that are considered as ancestors of plants, animals and fungi
Protoctista

_____ is a structure in the plant cell that contains aqueous solution of mineral salts which regulate the turgidity of adjoining cytoplasm.
vacuole

Some bacteria without cell wall and can change their shape are called _____
Mycoplasmas

The group of seed plants that roots lacks cuticle is_____
Conifer

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The group of animals that are called acoelomate animal is_____
Platyhelminthes

The mostly free-living and aquatic Platyhelminthes is called _____
Platyhelminthes

The world largest, tallest and oldest living thing is_____
Conifer

The organelle in Amoeba responsible for osmoregulation is_____
Contractile vacuole

The mode of nutrition in Amoeba is_____
Photosynthetic

Taenia solium is the tapeworm of_____
Pig

Animals with two germ layers are called_____
Diploblastic

The group of Aschelminthes that has corona is called_____
Rotifera

Ascaris is an example of Aschelminthes in the class_____
Rotifera

Phylum Aschelminthes are also called_____
Roundworms

Taenia saginata is the tapeworm of_____
Pig

Ancylostoma is an example of Aschelminthes in the class_____
Rotifera

The small sensory tube at the dorsal side of the peristomium in earthworm is called _____
Prostomium

What organ aids locomotion in earthworm?
Setae

The digestive tract of Arthropods is said to be_____
Complete

The coelom in Arthropod is greatly_____
Reduced

The dermal layer in Leucosolemia is its_____ layer.
Excretive

The specialized jaw-like appendages in starfish is called_____
Pedicellaria

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The principal respiratory organ in starfish is called_____
Tube feet

The endoskeleton of echinoderm is made up of plates of_____
Calcium carbonate

The blood system in vertebrates is termed_____
Closed

The anuran that lives on land among stones in damp places is_____
Toad

Which of the legs in Amphibian is used for jumping/leaping?
Hind leg

How many main group of reptiles exist?
4

The common name for Fasciola hepatica is_____
Liver fluke

The webbed feet in ducks serve as_____
Paddles

The body cavity of mammals is separated into two by a muscular sheet called_____
Diaphragm

Operculum is known to be present in_____
Tilapia

An average size of Amoeba is_____
0.02cm

The following structures are part of reproduction in Porifera except
All of the options

The cell that is for capturing Hydra's small animal food is called _____
Sensory cells

Nematodes are like platyhelminthes in the following ways except
They are both segmented

The following of are classes of the phylum arthropoda except ____.
Chilopoda

Organisms are divided into autotrophs and_____
heterotrophy

The mammalian heart has_____ chambers
4

_____ is the conversion of foreign substances into harm less forms
Detoxification

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A type of response in which a part of a plant moves in response to a directional stimulus is called_____
tropism

Stomata is sorrounded by two bean-shaped cells called_____ cells
guard

_____ is that part of shoot modified for sexual reproduction
flowering plants

_____are the flowering plants
Angiosperms

Seed plants are divided into _____ and angiosperms
gymnosperms

Seed plants are divided into gymnosperms and _____
angiosperms

Protoplasmic materials in the nucleus are called_____
nucleoplasm

The various types of microscope are simple, compound and_____ microscopes
electron

Aves have their bodies covered with_____
feathers

Aves has_____ chambered heart
4

Reptiles carry out gaseous exchange through their_____
lungs

Crocodiles and Turtltes are examples of_____
reptiles

_____ are the first group of vertebrates to have become completely adapted to life on land
Reptiles

Amphibians have stout bodies with powerful hind legs for leaping and_____
Jumping

Amphibians have webbed feet use for_____
swimming

Salamander is an example of_____
amphibians

In pisces, fertilization is_____
external

The body of Pisces is covered with_____

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Scales

The body temperature of fishes varies with that of its surroundings, therefore it is a_____ blooded animal
cold

Backbone or vertebral column replaces the notochord in_____
vertebrates

In the phylum echinoderms, fertilization is_____
external

In the phylum echinodermata, fertilization is_____
internal

Sea lilies is an example of the class of echinoderms called_____
Crinoides

Housefly is an example of the class arthropods called_____
insects

Lobsters is an example of the class of arthropods called_____
crustaceans

Protecting the body of the mollusca is a hard, calcareous substance called_____
shell

Clams is an example of the phylum_____
Mollusca

The phylum Mollusca uses gills for_____
respiration

The earthworm excretes waste products with the aid of an organ known as_____
Nephridia

The annelids posses_____ which is their excretory organ
Nephridia

Animals with a cavity lined by an epithelium of cells derived from the embryonic mesoderm are called _____ animals
coelomate

The external body of Ascaris lumbricoides is covered with tough, elastic and semi transparent_____
cuticle

Roundworms are _____in the intestine of man
parasites

The phylum aschelminthes are_____ symmetrical
bilaterally

The attachment of the sheep liver fluke to the gut of its host is a_____ adaptation of the organism
parasitic

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Sheep liver fluke is also known as Fasciola_____
hepatica

The sheep liver fluke requires_____ number of host to complete its life cycle
two

The medusa and polyp are forms individuals in the phylum_____
coelenterate

The sponges belong to the phylum_____
porifera

The simplest of all the phyla in the animal kingdom is_____
phylum protozoa

The group of plants classified into monocot and dicot is_____
angiosperm

Angiosperms are also known as_____
flowering plants

Seed plants are also called_____
Spermatophyte

The root of a pteridophyte is generally_____
adventitious

The leaves of a fern plant is called_____
frond

The dominant generation in the two distinct phases of the life cycle of a pteridophyte is the_____
Sporophyte

_____ is the largest group of bryophytes
liverwort

Bryophytes are mostly divided into _____and liverwort
mosses

Bryophytes are mostly divided into mosses and_____
liverwort

In bryophytes, the process the process by which the haplod generation alternates with the diploid is known as _____ of generation
alternation

Euglena belongs to the class of algae called_____
euglenophyta

Blue-green algae have_____ type of cell, while other algae are eukaryotes
prokaryotic

Thallophytes are also known as_____

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algae

The use of standard system to name living organisms is known as_____
nomenclature

The smallest unit of classification of living organism is_____
species

Animals with no backbone are called_____
Invertebrates

Crustacean is an example of the phylum_____
arthropoda

_____ is an unwanted change in the biological, chemical or physical characteristics of air, land and water
Pollution

An organism that lives in or on other organism and depends on it for food and shelter is called_____
parasites

_____ is concerned with the relationships between organisms and their environment
Ecology

The vertebral column is called_____
backbone

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