1. Which one of the following is the first step in scientific method?
   A. Drawing conclusion B. Making observation C. Testing hypothesis D. Making observation
2. Which one is not field equipment?
   A. Theodolite B. GPS receiver C. Centrifuge D. Flow meter
3. A scientific report may not contain
   A. Hypothesis B. Prediction C. Conclusion D. Acknowledgment
4. Which one of the following refers to how something is precisely measured or counted?
   A. Reliability B. Validity C. Accuracy D. None
5. In scientific research the factor that the researcher manipulates called
   A. Independent variable B. Confounding variable C. Dependent variable D. Anomalous variable
6. To reduce the spread of ADIS, we should
   A. Encourage males to be circumcised B. Restrict the number of sexual partners C. not share infected needles D. All
7. A dehydration reaction typically results in
   A. Monomers B. Splits polymers into their simplest forms C. polymers D. Isomers
8. Which one of the following are the structural units of nucleic acids?
   A. Amino acids B. glucose C. Fatty acids D. Nucleotides
9. The four most common elements the living system are
   A. Carbon, Nitrogen, Silicon and Iron B. Carbon, Nitrogen, Oxygen and hydrogen C. Carbon, Nitrogen, Oxygen and Iron D. Carbon, Hydrogen, Oxygen and iron
10. Which one of the following is not a structural carbohydrate?
    A. Chitin B. Cellulose C. Peptidoglycan D. starch
11. Which one is inorganic molecule?
    A. Iron III oxide B. Glycine C. Linoleic acid D. Methane
12. The energy required to convert a liquid to gas termed as
    A. Specific heat capacity B. Surface tension C. Latent heat of vaporization D. All
13. Which one is not ketose?
    A. Ribose B. Dehydroxyaceton C. Fructose D. Ribulose
14. One of the following is not the structural component of nucleotides
    A. Phosphate group B. Pentose sugar C. Thymine Uracil
15. A catalyst speeds up a reaction with no effect on
    A. The energy changed Type equation here.B. The product formed C. The nature of the catalyst itself D. None
16. Which one does not affect enzymatic activity?
    A. Temperature B. PH C. Substrate concentration D. None
17. Which type of molecule does have the same shape to the substrate molecule of an enzyme?

A. Allosteric inhibitor B. Noncompetitive inhibitor C. Competitive inhibitor D. All

18. The energy which is required to start off a reaction is termed as
    A. Turnover rate B. Activation energy C. Denaturation D. Deactivator
19. The final complex structure of proteins is known as
    A. Tertiary structure B. primary structure C. secondary structure D. Quaternary structure

20. If the ratio of inhibitor molecules to substrate molecules is six to four, the enzyme controlling the reaction will be
    A. 60%  B. 40%  C. 80%  D. 20%
21. When an enzyme is denatured by excessive heat, which one of the following does it lose?
    A. Secondary structure  B. Primary structure  C. Quaternary structure  D. Tertiary structure
22. Which one the following enzyme is not significant in textile industries?
    A. Protease  B. cellulase  C. Biochymosine  D. Lipase
23. To pass across plasma membrane by simple diffusion materials must not be
    A. Non- charged  B. Lipid insoluble  C. Small in size  D. Lipid soluble
24. The size of prokaryotic cells ranges
    A. 10nm-100nm  B. 1µ-10µ  C. 1mm-10mm  D. 110mm-120mm
25. The word cell is coined by
    A. Mathias Schneider  B. Rudolf Virchow  C. Robert Hooke  D. Rene
26. Which one of the following cytoplasmic organelle is not membrane bounded?
    A. Nucleuse  B. Ribosome  C. Mitochondria  D. Chloroplast
27. Which one is not the function of cell membrane?
    A. Regulate movement of materials  B. Encloses the cell  C. Provides mechanical strength  D. All
28. Which type of transport across cell membrane doesn't governed by concentration gradient?
    A. Osmosis  B. Simple diffusion  C. Facilitated diffusion  D. active transport
29. Cyclic photophosphorylation involves
    A. PSI and PSII  B. PSII  C. PSI  D. None
30. The final electron acceptor molecule in oxidative phosphorylation is
    A. NAD  B. FAD  C. Oxygen  D. Hydrogen
31. Which one of the following stores more energy than others per molecule?
    A. Pyruvate  B.NADH  C. Glucose  D. FADH
32. The first electron donor molecule in cyclic photophosphorylation is
    A. Oxygen  B. Water  C. P700  D. P680
33. Light dependent reaction of photosynthesis takes place in
    A. Stroma  B. Cytoplasm  C. Grana  D. Mitochondrion
34. Photorespiration takes place in
    A. Peroxisomes  B. Mitochondrion  C. Chloroplast  D. All
35. The first product of $C_4$ pathway is
    A. PGA  B. Oxaloacetic acid  C. RUBP  D. PGAL

36. How many kinds of gametes are possible with the genotype AaBB?

    A. AB and aB  B. Aa and BB  C. A , aB and B  D. AB,A,BB and aB

37. Linked genes do not assort :-

    A. Independently  B. if crossed over  C. when dominant  D. at all

38. Non-disjunction mutations leads to

A. Triploidy. B. trisomy C. polyploidy D. tetraploidy

39. When a section of chromosome breaks up and joins up the other end of the chromosome , it is called as:-

A. Deletion B. Duplication C. Inversion D. Translocation

40. A sequence three nucleotide bases on mRNA is called

A. Intron B. Exon C. Anticodon D. codon

41. The first step in DNA replication is

A. Enzymes break hydrogen bonds

B. Free nucleotides bind to DNA nucleotides

C. DNA is copied

D. RNA is copied

42. What does the stop codon do during protein synthesis?

A. Begins protein synthesis C. Ends protein synthesis

B. Pauses protein synthesis D. All

43. Regarding the ABO blood group inheritance, in which of the following matting a child of blood type 'O' is produced?

A. AA×OO B. BB×OO C. AO×AB D.AO×BO

44. All of the following are frame shift mutation except……..

A. Deletion B. substitution C. Addition D. insertion

45. The point at which two sister chromatids attached together is

A. Telomere B. Histone C. Centromere D. Cytomer

46. The process that produces new genetic material for evolution is…….

A. Segregation B. Mutation C. Recombination D. crossing-over

47. Which of the following enzyme is used to put together DNA nucleotides in to DNA?

A. DNA helicase B. DNA polymerase C. DNA ligase D. DNA gyrase

48. What do geneticists call the genotype in which the two alleles of a pair are identical?

A. Dominant B. Recessive C. Homozygous D. Heterozygous

49. During which stage of meiosis does crossing-over takes place?

A. Telophase B. Anaphase C. Prophase D. Metaphase

50. If the sequence of base along one side of DNA molecule is AAGCTA, then the complementary base sequence of base on the other side of the DNA molecule is……

A. TTCGAT B. AAGCTG C. UUCGAT D. GGTACA

51. Genetic information in DNA molecule is coded in the

A. Base pairings

B. Sequence of neucleotides

C. Proportion of each base

D. Turning pattern of the helix

52. One of the following is the disadvantage or potential cost of social behavior

A. Conservation of energy C. Increased intra specific competition

B. Increased ability to detect, repel predators D. Higher hunting efficiency

53. The type of pheromones that are highly volatile and can attract a mate from a distance is:

A. Sex pheromone B. Territorial pheromone

C. Releaser pheromone D. Alarm pheromone

54. The term operant conditioning was first used by;

A. Watson and Rayner C. BF Skinner

C. Wolfgang Kohler D. NikoTimbergen

55. Which one of the following is TRUE about imprinting? It is;

A. Learning based on trial and error

B. Learning process in which animal stop response to repetitive stimuli

C. Learning based on early experience

D. An increase in response to harmful stimulus

56. Which one of the following is an example of circadian rhythm?

A. Hibernation C. sleep and weak

B. Migration D. menstruation

57. Which behavior does result in mating and reproduction?

A. Social C. territorial

B. Courtship D. insight

58. Which of the following is not correct about the courtship behavior?

A. It includes a series of fixed action and releaser

B. Involves the selection of a specific mate

C. It is complex and specious unspecific

D. Attraction of opposite sex involves by gesture or by singing

59. Which type of learned behavior is used to solve a problem suddenly without actual Experience ?

A. Habituation C. insight learning

B. Sensitization D. classical conditioning

60. Which one of the following is not correct about sympathetic division of autonomic nervous-system?

A. It increases pulmonary ventilation

B. It increases cardiac output

C. It prepares the body for rest and repair

D. It prepares the body for fight or flight

61. Which one is miss matched

A. Skinner - habituation C. Konrad Lorenz - imprinting

B. Wolfgang kohler – insight learning D. Ivan Pavlov- classical conditioning

62. If someone suddenly removes his/her hand from a very hot object, which of the following types of behavior is manifested?

A. Imprinting B. reflex action C. learned behavior D. sensitization

63. A Chimpanzee concentrates to reach at a bunch of bananas hanging above its head. What kind of behavior is this?

A. Sensitization learning C. Insight learning

B. Associative learning D. Latent learning

64. Suppose when you first enter a room you notice an unpleasant smell which you eventually forget about its presence, what is this behavior called?

A. Latent learning B. insight learning C. habituation D. operant conditioning

65. A behavior that is positively reinforced and becomes more frequently practiced is known as

A. Classical conditioning C. Imprinting

B. Operant conditioning D. habituation

66. Which methods of communication are incorrect that does animal utilize to communicate with other individuals at the time of mating?

A. Sound B. visual display C. pheromones D. none

67. A worker bee communicate to other workers the information about the position of food she has discovered by:

A. Making special speech

B. Performing a special dance

C. Rubbing her antennae against that of other workers

D. Breathing on the nostrils of other workers

68. What is the best term that refers to all of the genes present in the population?

A. Genome B. Biochemistry C. Gene pool D. DNA

69. A theory that is developed by incorporation of gene expression and theory of natural selection:-

A. Darwinism B. Lamarckism C. Neo-Darwinism D. All

70. A structure that have the same origin but different functions are called:-

A. Analogous B. Homologous C. Supperlogous A. anti-logous

71. The fossil that was found in 1974 at hadar was having 40 % of the bones . its age is 3.2 million years. Its name is

A. Ardipithicusafarensis C. Australopithicusrobustus

B. AustralopithicusAfarensis D. Ardipithicusramides

72. A hormone which controls the sleep wake cycle in animals is

A. Pheromone B. Melanin C. Melatonin D. none

73. Among the following special creationism theories , which one states that God is the inventor of evolution

A. Young earth B. Old earth C. day-age-and gap D. Progressive

74. Which of the following theory emphasizes on the origin of life on earth from other planet/s/

A. Eternity of life C. Cosmozoan theory

B. Biochemical theory D. Creationism

75. Which of the following are the first autotrophic organisms in the evolution of living things?

A. Cyanobacteria C. Blue green algae

B. sulphur bacteria D. green algae

76. A genetic change in population that passes on through successive generations is known as ;

A. Mutation B. Evolution C. selection D. Adaptation

77. Which of the following scientist developed the biochemical theory of evolution?

A. Haldane B. Bernal C. Miller D. Lamarck

78. Which of the followingidea is not part of Darwin's theory of evolution?

A. Overreproduction

B. Use and disuse of body parts

C. Existance of heritable variations

D. Survival of the fittest

79. What is the age of the fossil containing 3.125% of the original **carbon-14** having a half-life of 5730 year?

A. 17850 years B. 36850 years C. 28650 years D. 30850 years

80. Which of the following comparisons are not used as the evidence of evolution?

A. Anatomy B. Embryology C. Biochemistry D. Analogy

81. Which person is known by supporting the theory of eternity of life?

A. Aristotle B. Arrhenius C. Aenstine D. Mendel

82. At which phase of a population growth curve is the fastest growth is shown

A. lag phase B.log phase C. stationary phase D. death phase

83. Which is the greatest impact on determining the characteristics of different biomes

A. climate C. number of lakes

B. longitude D. diversity of plants

84. Which biome has low temperature, small amount of precipitation, and permafrost?

A. taiga B. tundra B. hat desert D. grass land

85. Which one is a broadest level in the study of ecology?

A. ecosystem B. population C. biosphere D. community

86. Two different populations of birds live in the same area and eat the same type of food. Which **most likely** describes the relationship between these two populations of birds?

A. mutualism B. competition C. parasitism D. predator-pray

87. Which one of the following factors does not affect the type of climax community that may develop in an area?

A. soil type B. thunderstorm C. precipitation D. temperature

88. The global biosphere is divided in to:-

A. niches B. habitat C. ecosystem D. biomes

89. Which one of the following organisms are pioneer colonizers of bare rock?

A. shrubs B. ferns C. lichens D. Grass

90. Which bacterial genus fixes nitrogen in the nodules of leguminous plants?

A. Agrobacterium B. Escherichia C. Rhizobium D. Azotobacter

91. Which one of the following concept contains all the others?

A. community B. species C. genus D. population

92. Which one of the following cultivated crops has no center of diversity in Ethiopia?

A. *Brassica carinata* B. *zea mays* C. *eragrosticteff* D. *cocciniaabissinica*

93. From the aquatic biomes, the one which is most diverse of all marine habitats with many strata like the tropical rain forest is:

A. coral reef B. Estuarine C. Ocean, abyssal D. Ocean, pelagic

94. Any organism that can cause an infectious disease is called?

A. bacteria B. viruses' C viroid D. pathogen

95. In which of the following types of infection will the infected cells burst?

A. lysogenic B.prophage infection C. lytic infection D. viroid infection

96. Bacteria can classified as gram positive and gram negative based on a substance found in Their……..

A. plasma membrane B. cell walls C. plasmids D. shapes

97. Bacteria that are rod shaped are called?

A. spirochatesB. spirilla C. cocci D. bacilli

98. The enzyme that the HIVviruse uses to copy RNA into DNA is

A.reverse transcriptase C. peptidoglycan

B. bacilli D.cyanobacteria

99. Which one of the following can be a vector of a disease?

A. insects B. food C. air D.soil

100. Which of the following reservoir of infections are **not** correctly paired?

A. Food- typhoid C. Air-pneumonia.

B. Contaminated objects-trachoma D. Human being –malaria

**NIFAS SILK LAFTO SUB-CITY ADMINSTRATION EDUCATION OFFICE 2012 ACADEMIC YEAR SECOND SEMISTER BIOLOGY MODEL EXAM FOR GRADE 12TH**

**GINBOT 2012/ JUNE 2020**

ANSWER

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | D | 21 | D | 41 | A | 61 | A | 81 | C |
| 2 | C | 22 | C | 42 | C | 62 | B | 82 | B |
| 3 | B | 23 | B | 43 | D | 63 | C | 83 | A |
| 4 | C | 24 | B | 43 | B | 64 | C | 84 | A |
| 5 | A | 25 | C | 45 | C | 65 | B | 85 | C |
| 6 | D | 26 | B | 46 | B | 66 | D | 86 | B |
| 7 | C | 27 | D | 47 | B | 67 | B | 87 | B |
| 8 | D | 28 | D | 48 | C | 68 | C | 88 | D |
| 9 | B | 29 | C | 49 | C | 69 | C | 89 | C |
| 10 | D | 30 | C | 50 | A | 70 | B | 90 | C |
| 11 | A | 31 | C | 51 | B | 71 | A | 91 | A |
| 12 | C | 32 | C | 52 | C | 72 | C | 92 | B |
| 13 | A | 33 | C | 53 | A | 73 | D | 93 | D |
| 14 | C | 34 | D | 54 | C | 74 | C | 94 | D |
| 15 | D | 35 | B | 55 | A | 75 | B | 95 | C |
| 16 | D | 36 | A | 56 | C | 76 | B | 96 | B |
| 17 | C | 37 | D | 57 | B | 77 | A | 97 | C |
| 18 | B | 38 | B | 58 | A | 78 | B | 98 | A |
| 19 | D | 39 | D | 59 | C | 79 | B | 99 | A |
| 20 | B | 40 | D | 60 | C | 80 | D | 100 | B |

**NIFAS SILK LAFTO SUB-CITY ADMINSTRATION EDUCATION OFFICE 2012 ACADEMIC YEAR SECOND SEMISTER BIOLOGY MODEL EXAM FOR GRADE 12TH**

**GINBOT 2012/ JUNE 2020**

**GENERAL DIRECTION**

IN THIS EXAMINATION, THERE ARE A TOTAL OF **100 MULTIPLE CHOICE QUESTIONS.** READ CAEFULLY AND SELECT THE BEST ANSWER AND BLACKEN ONLY THE LETTER OF YOUR CHOICE ON THE SEPARATE ANSWER SHEET PROVIDED. FOLLOW THE INSTRUCTIONS ON THE ANSWER SHEET AND THE EXAMINATION PAPER CAREFULLY. USE ONLY **PENCIL** TO MARK YOUR ANSWERS. YOUR ANSWER MARK SHOULD BE **HEAVY** AND **DARK.**

YOU ARE ALLOWED TO WORK ON THE EXAM FOR **2 HOURS.** WHEN THE TIME IS CALLED, YOU MUST IMMEDIATELY STOP WORKING.

ANY FORM OF CHEATING OR AN ATTEPT TO CHEAT IN THE EXAMINATION WILL RESULT IN AN AUTOMATIC DISMISSAL FROM THE EXAMINATION HALL AND CANCELLATION OF YOUR SCORE(S).

PLEASE MAKE SURE THAT YOU HAVE WRITTEN ALL THE REQUERED INFORMATION ON THE ANSWER SHEET BEFORE YOU START TO WORK ON THE EXAMINATION.

**DO NO TURN THIS PAGE OVER UNTIL YOU ARE TOLD TO DO SO.**

**NIFAS SILK LAFTO SUB-CITY ADMINSTRATION EDUCATION OFFICE 2012ACADEMIC YEAR SECOND SEMISTER BIOLOGY MODEL EXAM FOR GRADE 12TH**

**GINBOT 2012/ JUNE 2020**

**TABLE OF SPECIFICATION FORMAT**

DEPARTMENT: - **BIOLOGY**

ACADEMIC YEAR: **2012E.C** SEMESTER: **2nd** EXAM TYPE **MODEL**

| Grade | Unit | list of contents | no.of periods | multiple choice | remark |
|---|---|---|---|---|---|
| 11 | 1 | The science of biology, scientific method, tools of biology and relevance and promises of biology | 24 | 6 | |
| | 2 | Biochemical molecules:- Carbohydrates<br><br>Protein, lipids and nucleic acid | 24 | 6 | |
| | 3 | Enzymes:- properties of enzymes, classes of enzymes, how to enzyme lower activation energy, types of enzymes and factor affecting enzymes activities | 27 | 8 | |
| | 4 | Cell biology:- cell theory, types of cell, parts of eukaryotic cells, transport in cells, other organelles and their function. | 29 | 8 | |
| | 5 | Energy Transformation:-<br><br>Respiration:- types of respiration, stages of aerobic respiration and photosynthesis:- light reaction and dark reaction, C3 and C4 photosynthesis | 27 | 7 | |
| 12 | 1 | Micro-organisms:- bacteria and viruses | 30 | 15 | |
| | 2 | Ecology :- nutrient cycle, ecological succession, biomes, biodiversity and population | 30 | 15 | |
| | 3 | Genetics:- genetic cross, molecular genetics, protein synthesis, mutation | 26 | 15 | |
| | 4 | Evolution:- theories of origin of life on Earth, theories of evolution, evidence of evolution, Divergent and convergent evolution and Human evolution | 25 | 10 | |
| | 5 | Behavior: - types of behavior, innate and learning. Pattern of behavior | 25 | 10 | |
| | | TOTAL | | 100 | |