L I F E S C I E N C E
Madhyamik (English Version)

Time : Three hours Fifteen Minutes (3 hrs 15 mins)
(First Fifteen minutes for reading the question paper only)
Full Marks – 90

(For Regular and Sightless Regular Candidates) special credit will be given for answers which are brief and to the point. Marks will be deducted for spelling mistakes, untidiness and bad hand writing.

Directions

(For regular candidates, the questions of group 'A', 'B', 'C' and 'D' will have to be answered. Instructions regarding the number of questions to be attempted have been indicated at the beginning of each group.)

Group- 'A'

[Multiple choice type questions]
(Answer to all question is compulsory)

1. Write the answer in complete sentence by choosing the correct answer for each question with respective serial number. Marks for each question is 1.

1X15=15

1.1 The accessory element of chlorophyll is _____
a) Na b) Ca c) Mg d) K

1.2 The common phase of all types of respiration is _____
a) Creb's cycle b) Electron Transport System c) Glycolysis d) Cytric acid cycle

1.3 Bile is secreted from _____
a) Gall bladder b) pancreas c) Systic Duct d) Liver

1.4 The vestigial organ situated in human alimentary system is _____
a) Rectum b) Cocsis c) Appendix d) Nictiteting membrane

1.5 In which organ Glomerulus is found?
a) Urinary bladder b) Nephron c) Malpighian Corpuscle d) Kidney

1.6 The Hormone help in Tropic movement is _____
a) Gibberellin b) Kinin c) Auxin d) Florigen

1.7 The sensory process of neuron is _____
a) Axon b) Dendron c) Axon A Dendron both d) None of these

1.8 Jim Corbett is a _____
a) Sanctuary b) National Park c) Reserve forest d) Biosphere Reserve

1.9 Which of the following is indirect division?
a) Mitosis b) Meiosis c) Both Mitosis and Meiosis d) Amitosis

1.10 Which of the following is found in Influenza virus?
a) DNA b) RNA c) DNA and RNA d)None of these

1.11 Secondary Growth is found in _____
a) Plant b)Animal c) Both plant and animal d) None of these

1.12 Wild yam reproduces by _____
a) Stem b) Root c) Bulbil d) Leave

1.13 Endosperm is always _____
a) Diploid b) Triploid c) Haploid d) Tetraploid

1.14 The total number of airsacs with two lungs in pigeon is _____
a) 9 b) 7 c) 9 pairs d) 7 pairs

1.15 Who proposed the 'Mutation theory'?
a) Lamarck b) Hugo Devries c) Weismann s) Darwin

Group –B

(Very Short Answer type Questions)

2. Answer any twenty one questions out of twenty six questions given below as instructed. The mark for each question is 1.

1X21=21

Fill up the blanks with proper words in the following sentences (any five) 1X5=5

2.1 The first produced carbonated permanent compound in photosynthesis is _____.

2.2 Muscle fatigue is formed due to the influence of _____ acid.

2.3 One enzymeless digestive juice is _____.

2.4 The Structural and functional unit of the Kidney is _____.

2.5 The sister chromosomal movement trend of mitosis observed in _____ phase.

2.6 The tendril of pea is the modification of _____.

Decide whether the following Statements are True of False (any five) 1X5=5

2.7 Vitamin is a caloriless food component .

2.8 Tubefeet is the locomotary organ of Star fish.

2.9 Thalamus of the brain controls the body temperature.

2.10 The innermost third layer of the eyeball is retina.

2.11 90% sand present in the sandy soil.

2.12 The phenotypic ratio of Dihybrid cros is 1:2:1.

Match the words in Column - A with those which are most appropriate in Column – B and rewrite the correct pair mentioning the serial no. Of both columns (any five) :- 1X5=5

Column-A	Column-B
2.13 Phylloclade	a) Spinal Cord
2.14 Frog	b) Plant cytokinesis
2.15 Fragmentation	c) Spirogyra
2.16 Cell plant	d) Internal ear
2.17 Reflex Action	e) Cactus
2.18 Perilymph	f) External fertilization
	g) Animal cytokinesis

Answer in a single word or in a single sentence (any six) 1X6=6

2.19 Choose the odd one and write it :

Myopia, Hypermetropia, Cochlea, presbyopia.

2.20 Where chime is produced?

2.21 A pair of related terms is given below. On the basis of the relationship in the first pair write the suitable word in the gap of second pair.

Carbohydrate : glucose : protein : _____

2.22 What was the ratio of Methane, Ammonia and Hydrogen of Miller and Urey's experiment ?

2.23 What do you mean by Halophyte?

2.24 Where C.S.F is found?

2.25 Among the following four terms one includes the other three. Find it out and write it ;

National park, Sanctuary, In Situ conservation, Reserve forest.

2.26 Write the function of the Swim bladder of the fish.

Group – C

3. Answer any 12 questions in 2-3 sentences out of 17 questions given below. 2X12=24

3.1 Photosynthesis and Respiration are two opposite metabolic process. Explain it.

3.2 Write the necessity of the accessory repiratory organ . (any two)

3.3 Write the digestion process of Carbohydrate in buccal cavity.

3.4 Write any two differences between Halophytic and Halozoic nutrition.

3.5 In which way blood cogulates?

3.6 Write the normal Diastolic and Systolic pressure of man.

3.7 Write two objectives of locomotion and movement.

3.8 Write the cause and symptoms of Diabetes incipedus.

3.9 Write one each of the similarity and dissimilarity between Nervous System and Hormone.

3.10 Write the application of Auxin in Agriculture.

3.11 Write two demerits of air pollution.

3.12 What is food chain? Give example.

3.13 Explain the first law of Heredity.

3.14 Explain the relation between the growth and reproduction.

3.15 Explain any two application field of Genetics in human civilization.

3.16 Write the role of air sacs in the adaptation of pigeon.

3.17 Write and explain any two examples against law of inheritance of acquired characters of Lamarckism

Group – D

4. Answe six questions or their alternatives given below. Sightless Candidates have to answer question No. 4.1 (A) instead of 4.1 :-

4.1 Draw a neat diagram of a Nephron and label the following parts :- 3+2=5

a) glomerules b) Loop of Henley c) proximal convoluted tuble d) Bowman's Capsule

OR

Draw a neat diagram of a typical Neurone and label the following parts :-

a) Dendrite b) Schwann Cell c) Nucleus d) Medullary Sheath

(For sightless candidates only)

4 (A) Write one function each of the following five parts of a nephron :-

a) glomerules b) Bowman's capsule c) proximal convoluted tuble d) Loop of Henley
e) Distal convoluted tuble

OR

Write one function each of the following five parts of a neurone :-

a) Dendrite b) Cell body c) Axon d) Medullary Sheath e) Schwann Cell.

4.2 Write the digestion process of carbohydrates in man. In which condition and where the fat is absorbed? 3+2=5

OR

Explain the breathing process of man. Write the respiratory organs in plants. 3+2=5

4.3 Explain the water absorption process in plant. Write the process of food conduction in plant. 3+2=5

OR

Write two Structural differences between artery and vein. Write the functions of any three valves of human heart. 2+3=5

4.4 Write the role of bacteria in N_2 cycle. Discuss the characteristics of energy flow in ecosystem. 3+2=5

OR

What is Bio-geochemical cycle? Write the role of producer and decomposer in ecosystem. 2+3=5

4.5 Describe the prophase of Mitosis in brief. Explain the significance of Meiosis. 3+2=5

OR

Describe the double fertilization process in flowering plant. What is parthenogenesis? Give examples. 3+2=5

4.6 Describe Mendel's monohybrid cross with checker Board by giving an example of animal. Write two exceptions of Mendalism. 3+2=5

OR

Explain the evolution process by comparing the structures of different vertebrate heart. What is 'Struggle for existence'?

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