

**West Bengal Madhyamik Board Class 10 Life Science 2016
Question Paper**

Group-A

1. Choose the correct answer to complete the sentence (any five) [1x5=5]

i. What is the photosensitive layer of a human eyeball?

- (a) Retina
- (b) Sclera
- (c) Choroid
- (d) Cornea

ii. Which is the Thyroxine hormone secreting endocrine gland?

- (a) Adrenal
- (b) Testis
- (c) Thyroid
- (d) Pancreas

iii. Which is the phase of mitosis in which chromosome counting can be done?

- (a) Prophase
- (b) Metaphase
- (c) Anaphase
- (d) Telophase

iv. From hybridisation of two hybrid tall pea plants, what is the percentage of hybrid tall offsprings will be obtained in the next filial generation?

- (a) 25%
- (b) 50%
- (c) 75%
- (d) 100%

v. What are the wings of birds and wings of butterflies?

- (a) Analogous organ
- (b) Vestigial organ
- (c) Homologous organ
- (d) Transplanted organ

vi. Name the plants in which stomata are present on the upper surface of the leaf.

- (a) Sundari plant
- (b) Lotus plant
- (c) Pea plant

(d) Cactus

vii. Which is the human disease caused by protozoa?

- (a) Malaria
- (b) Filaria
- (c) Cholera
- (d) Hepatitis

2. Answer in one sentence (any ten)

[1x10=10]

- i. Which plant excretory product is used to polish wooden doors and windows?**
- ii. Which is the one organic excretory product present in the human urine?**
- iii. Apart from hearing, what is the other function of the human ear?**
- iv. Which is the blood sugar controlling hormone secreted from pancreas?**
- v. Name the plant hormone that regulates tropic movement.**
- vi. In which phase of mitosis two sister chromatids got separated?**
- vii. Which is the process by which a male honeybee or drone is formed from the unfertilised egg of a queen bee?**
- viii. Reproduction in Bryophyllum by leaf buds is what kind of reproduction?**
- ix. Who is the proponent of the theory of “Natural Selection”?**
- x. Give an example of an animal fossil.**
- xi. For what purpose phylloclades of cactus bear a thick cuticle?**
- xii. Name the ‘bacteria infecting viruses’**
- xiii. Name a fungus that produces antibiotic medicine.**

3. Attempt any six questions from the given:

[2x6=12]

- i. Write two significance of excretion in Animals.**
- ii. What is the one function each of “dendron” and “axon”?**
- iii. Why are hormones called “chemical co-ordinators”?**
- iv. If cytokinesis fails to occur in the division of an animal cell, what would happen?**

- v. In Mendel's "monohybrid cross" experiment, a pea plant producing round seeds is crossed with another pea plant producing wrinkled seeds. What would be the phenotypes of the F_2 generation plants and what would be their ratio?
- vi. What are the differences between the "Homologous organs" and "Analogous organs"?
- vii. What are the adaptive features of the respiratory organ of the pigeon?
- viii. Mention the scientific name of a beneficial unicellular fungus and a plant pathogenic multicellular fungus.
4. Attempt any ten questions from the following: [3x10=30]
- i. Write two methods of removal of plant excretory products with examples.
 - ii. What is a synapse? Mention differences between 'Afferent' and 'Efferent' Nerves.
 - iii. Define "Nerve Ganglion." Mention two functions of the spinal cord.
- iv. What are the three characteristic features of hormones?
- v. Write the site of secretion and two functions of progesterone.
- vi. Point out three differences between 'Prokaryotic Cells' and 'Eukaryotic Cells'.
 - vii. Why is 'Meiosis' called reductional division? What types of cell division occur respectively in the cells of root tip in a higher plant and pollen mother cell?
 - viii. Explain in relation to heredity, how a female child is born in humans?
 - ix. What are the three differences between Asexual and Sexual reproduction?
 - x. How many hereditary variations are selected by 'Natural Selection'?
 - xi. Describe three adaptive characteristics of Cactus with reasons.
 - xii. Name two diseases causing protozoa. What is the utility of drinking boiled water?
 - xiii. Name three diseases of children which can be prevented through universal immunisation.

Group-B

Answer any 5 from the Question. No. 5 to question no.11

5. What is the role of liver in human excretion? Name the part which remains in between proximal and distal convoluted tubules of nephron. "All excretory products are waste products, but all waste products are not excretory products"-Explain with example. [2+1+2=5]

6. Describe the structural characteristics of 'Axon'. Where is the 'organ of corti' located and what's its function?

7. From where is Adrenaline secreted in humans? Why is it called "Emergency Hormone"? Mention two functions of "Gibberellin."

8. What kind of cell division occurs at the growing part of a plant body? Cells in the leaf at a certain plant possess 24 chromosomes, how many chromosomes are found respectively in a cell of a petal and in a pollen cell of that plant? Mention two significance of "meiosis".

9. What is meant by 'pure breed' organisms in hereditary experiments? Guinea pig with pure black and rough fur is hybridised with another guinea pig having pure white and smooth fur. Show with the help of a checkerboard the types of offsprings produced in the F₁ and F₂ generation. (Factor B for black is dominant over factor b for white and R for rough fur is dominant over factor r for smooth fur).

10. Define fossil and give an example. What kind of evolutionary changes are observed in the hearts of fishes, toads and lizards?

11. Mention one adaptive importance of each of the followings:

- a. Bones of Pigeon
- b. Body contour of Rohu fish
- c. Dorsal fin of Rohu fish
- d. Eyes of Pigeon
- e. Leaves of Sundari Plants

Group-C

Answer any one question of the following:

12. Draw a neat labelled diagram of the longitudinal section of the eyeball in human and label the following parts: [5+(1x3)=8]

- a) Optic nerve
- b) Lens
- c) Iris

13. Draw a neat labelled diagram of a lotus plant and mark the following parts: [5+(1x3)=8]

- a) Leaf lamina
- b) Rhizome
- c) Thalamus

[For Sightless Candidates Only]
(Diagram not required)

Answer any one question:

12 (A) Write down the structure and functions of any four parts of human eye. [2x4=8]

13(A) Write down the adaptive features and their significance any four parts of a lotus plant. [2x4=8]

[For external candidates only]

Group-D

Answer any one question: [$(1 \times 3) + 3 + 3 = 10$]

14. How many types of plastids are found? Name different types. Explain the structure of a chloroplastid. Mention three characteristic features of living things.

15. Write short notes on any four: [$2 \frac{1}{2} \times 4 = 10$]

- a) Cell membrane
- b) Blood
- c) Xylem
- d) Centrosome
- e) Merismatic Tissue

