



DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class:- XI
Time- 3 Hrs.

Subject:- Biology
F. M:- 70

General Instructions:-

1. All questions are compulsory.
2. This question paper consists of five sections A, B, C, D and E. Section A consists of 5 questions of one mark each. Section B consists of 5 questions of two marks each. Section C consists of 12 questions of three marks each. Section D consist of one value based question of four marks. Section E consists of 3 questions of five marks each.
3. There is no overall choice in the question paper, however an internal choice is provided in one question of two marks, one question of three marks and all 3 questions of five marks.
4. Wherever necessary a labelled diagram should be neatly drawn.

SECTION A

1. Give the scientific name for wheat and also mention the phylum to which it belong.
2. Name two unicellular algae which are used as food supplement by space travellers.
3. What do you understand by the term "flux".
4. What is RuBisCo ? Explain its role in C₃ photosynthesis.
5. What is corpus callosum.

SECTION B

6. Mention the three steps involved in the sexual cycle of fungi. What do you understand by the term dikaryophase?
7. Mention four charecteristics features of Aves.
8. Name and describe the two types of glycocalyx found in bacteria.
9. Differentiate between the apoplast and symplast pathways of movement of water in plants.
10. Explain the role of potassium and calcium in plant life.

OR

What do you mean by:-

- (a) Chlorosis (b) Necrosis

SECTION C

11. Give the answer for following:
 - (a) What is the function of frond present in brown algae?
 - (b) Name the constituents of cell wall in green algae.
 - (c) Name the major pigment and stored food present in red algae.
12. With the help of diagram explain coelomate, pseudocoelomate and acoelomate.
13. Describe the three kinds of flowers based on the position of floral parts on the thalamus.

P.T.O

14. Distinguish between the following:
- (a) Exarch and endarch condition of protoxylem
 - (b) Open and closed vascular bundles
 - (c) Apical meristem and lateral meristem
15. Answer the following:
- (a) Why are the mitochondria and plastids called semi - autonomous particles?
 - (b) What is referred to as satellite chromosome?
 - (c) What is the significance of a vacuole in a plant cell?
16. Differentiate between prosthetic group and coenzymes. Give an example each.
17. (a) Supply a specific scientific term for each of the following :
- (i) Phase in the cell cycle when protein and RNA are synthesised.
 - (ii) Points at which two sister chromatids are held together .
- (b) Describe the following words
- (i) Synaptonemal complex
 - (ii) Chiasmata
18. Give a brief account of ATP molecules produced by complete oxidation of one molecule of glucose in eukaryotes.
19. Distinguish between differentiation, dedifferentiation and redifferentiation.
20. (a) What provides alkaline pH in small intestine?
- (b) How does intestinal juice contribute in the digestion of protein?

OR

Mention the criteria for essentiality of an element.

21. Distinguish between
- (a) IRV and ERV
 - (b) Vital capacity and total lung capacity
 - (c) Asthma and Emphysema.
22. Explain the role of glucagon and insulin in maintaining the glucose homeostasis in blood.

SECTION D

23. Shiksha, has difficulty in seeing in relatively low light. On visiting the doctor , the doctor explains the working of the eyes and having certain vitamin in food which helps in improving night vision. Shiksha communicates this with her friends in hostel and encourages them to include fruits and vegetables in their food.
- (a) Name the photoreceptor cells present in eye. Which one is responsible for scotopic vision.
 - (b) Draw a neat diagram of eye and mark its different parts.
 - (c) What values are depicted by Shiksha.

SECTION E

24. (a) Describe the three kinds of muscles tissue present based on structure, location of occurrence and function.
- (b) Name the excretory organs of cockroach. Where are these located?

OR

- (a) Name the stage in cell division at which the following events occur?
- (i) Chromosomes move to spindle equator
 - (ii) Centromere splits and chromatids separate.
- (b) Explain , why a pair of homologous chromosomes is genetically different, but a pair of sister chromatids is genetically identical before crossing over in meiosis.
- (c) What is meant by 'Quiescent stage of cell cycle'.
- (d) Give the significance of Mitosis.

25. (a) Describe the mechanism of Hatch and Slack pathway in C₄ plants.
- (b) State Blackman"s Law of limiting factors.

OR

- (a) Write two energy yielding reactions of glycolysis.
- (b) Mention the two crucial events in aerobic respiration.
- (c) Why is respiratory pathway considered as an amphibolic pathway?

26. (a) List the sequence of steps that occur in pumping action of heart during one cardiac cycle.
- (b) Draw the longitudinal section of kidney and label its different parts.

OR

Explain the sliding filament theory of muscle contraction.