# BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
MID TERM EXAMINATION 2024-25
BIOLOGY (044)

Class: XI | Duration: 3 Hr
Date: 14/09/2024 | Max. Marks: 70
Name: | Exam R.no:

General Instructions:

i. This question paper contains of 33 questions in 5 sections.
ii. All questions are compulsory. However, an internal choice is provided in some questions.
iii. Section A consists of 16 objective-type questions carrying 1 mark each.
iv. Section B consists of 5 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
v. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
vi. Section D consists of 2 case-based questions of 04 marks each with sub-parts.
vii. Section E consists of 3 Long Answer type questions carrying 05 marks each. Answers to these questions should be in the range of 80 to 120 words.
Wherever necessary, neat and properly labelled diagrams should be drawn.

## SECTION-A

1. *Neurospora* is used extensively in biochemical and genetic work.Which class of fungi it belongs to? 1
   (a). Phycomycetes
   (b). Basidiomycetes
   (c). Deuteromycetes
   (d). Zygomycetes

2. Which of the following protozoan is the causative organism for the disease sleeping sickness? 1
   (a). Plasmodium
   (b). Entamoeba
   (c). Trypanosoma
   (d). Claviceps

3. Bryophytes are dependent on water, because 1
   (a). water is essential for their vegetative propagation
   (b). the sperms can easily reach upto egg in the archegonium
   (c). archegonium has to remain filled with water for fertilization
   (d). water is essential for fertilization for their homosporous nature

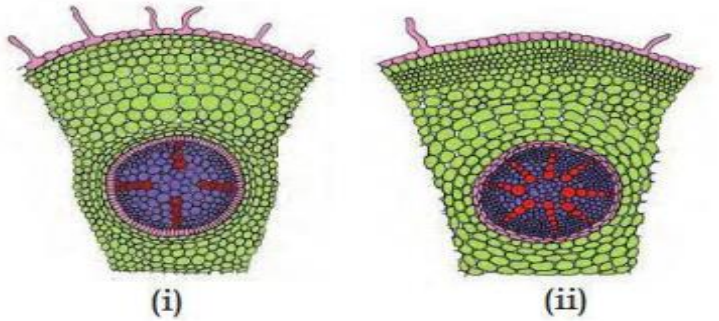
4. Peat moss is used as a packing material for sending flowers and live plants to distant places because 1
   (a). it serves as a disinfectant
   (b). it is easily available
   (c). it is hygroscopic
   (d). it reduces transpiration

5. The excretory structures of flat worms/Taenia are 1
   (a). flame cells
   (b). protonephridia
   (c). Malpighian tubules
   (d). green glands

6. When stamens are attached to the perianth, the condition is called 1
   (a). Epipetalous
   (b). Polyandrous
   (c). Epiphyllous
   (d). None of the above

7. The term 'monoadelphous' is related to: 1
   (a). Calyx
   (b). Corolla
   (c). Androecium
   (d). Gynoecium

8. Identify the figure (i) & (ii) 1



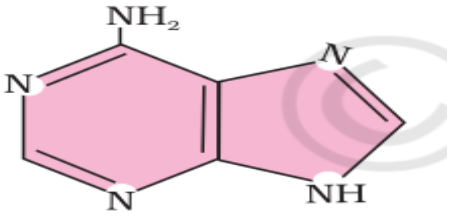

   (a). (i)– T.S of dicot root (ii) – T.S of monocot root
   (b). (i) – T.S of dicot stem (ii) – T.S of monocot stem
   (c). (i) – T.S of monocot root (ii) – T.S of dicot root
   (d). (i) – L.S of monocot stem (ii) – L.S of dicot root

9. In dicots stem, which condition is present 1
   (a). Cambium present between xylem & phloem, known as closed type vascular bundle
   (b). Cambium absent between xylem & phloem, known as closed type vascular bundle.
   (c). Cambium present outside xylem & phloem, known as open type vascular bundle
   (d). Cambium present between xylem & phloem, known as open type vascular bundle.

10. Which of the following receives sound signal in frog? 1
   (a). Nictitating membrane
   (b). Pericardium
   (c). Tympanum
   (d). Duodenum

11. Which of the following is not correct? 1
   (a). Robert brown discovered the cell.
   (b). Schleiden and Schwann formulated the cell theory.
   (c). Virchow explained that cells are formed from pre-existing cells.
   (d). A unicellular organism carries out its life activities within a single cell.

12. Identify the given molecule. 1




(a). Adenosine
(b). Uracil
(c). Adenine
(d). Adenylic acid

Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a). Both A and R are true, and R is the correct explanation of A.
(b). Both A and R are true, and R is not the correct explanation of A.
(c). A is true but R is false.
(d). A is false but R is true.

13. Assertion (A): In cymose type of inflorescence the main axis terminates in a flower. 1
Reason(R): A bisexual flower contains both androcoeium and gynoecium.

14. Assertion (A): Frog neither hibernates nor aestivates. 1
Reason(R): Frog cannot maintains its body temperature.

15. Assertion (A): Mitochondria are known as the power houses of the cell. 1
Reason(R): Mitochondria generate biologically useful energy (ATP) for the cell's activities by oxidation of fuel.

16. Assertion (A): There is a mechanism in a cell to control enzyme action. 1
Reason(R): Enzymes do not require any control mechanism.

SECTION-B

17. What are the characteristic features of Euglenoids? 2

18. Both gymnosperms and angiosperms bear seeds, then why are they classified separately? 2

19. Explain the characteristic features of class Mammalia. 2

20. Draw and label the structure of a monocotyledon seed. 2

21. Describe the fluid mosaic model of plasma membrane. 2

OR

Differentiate between active and passive transport. Define osmosis.

SECTION-C

22. State two economically important uses of: 3
(a). Archaebacteria
(b). Ascomycetes
(c). Eubacteria

23. Define the following terms: 3
(a). Gemmae
(b). Prothallus
(c). Male strobili

24. What are the modifications that are observed in birds that help them fly? What are homoiothermus animals? 3

25. **Floral Formula:** $\oplus \, ♂ \, K_{(5)} \, \overbrace{C_{(5)} \, A_5}^{} \, \underline{G_{(2)}}$ 3

(a). Write the floral characters based on the above floral formula.
(b). Write an economic importance of solanaceae family.

26. (a). Draw and label the stomatal apparatus of dicot and monocot leaf. 3
(b). What are casparian strips?

27. Write a short note on the morphology of a frog. 3

OR

What is mimicry?How do frogs respire on land and in the water? How are frogs beneficial for mankind?

28. Illustrate a glycosidic, peptide and a phosphodiester bond 3

SECTION-D

29. The vertical section of a dorsiventral leaf through the lamina shows three main parts, namely, epidermis, mesophyll and vascular system. The tissue between the upper and the lower epidermis is called the mesophyll. Mesophyll, which possesses chloroplasts and carry out photosynthesis, is made up of parenchyma. 4
(a). What is abaxial and adaxial epidermis? Differentiate between them.
(b). What are the two types of parenchyma cells present in mesophyll?
(c). Explain the function of bulliform cells in grasses.

OR

Which tissue constitutes the ground tissue system and mention their role?

30. Almost all enzymes are proteins. An enzyme like any protein has a primary, secondary and tertiary structure. An active site of an enzyme is a crevice or pocket into which the substrate fits. Thus enzymes, through their active site, catalyse reactions at a high rate. Inorganic catalysts work efficiently at high temperatures and high pressure, while enzymes get damaged at high temperatures 4
(a). What are ribozymes?
(b). What are co-factors?
(c). Differentiate between isomerases and ligases.Mention the factors affecting enzyme activity.

OR

How do presence of carbonic anhydrase affect rate of reaction?Explain.

SECTION-E

31. Write a short note on: 5
(a). Pisces
(b). Amphibia
(c). Reptilia

OR

(a). How direct development is is different from indirect development?
(b). Which is the largest phylum of Animalia? Write its characteristic feature.
(c). How are parapodia and nephridia useful to annelids?

32. (a). Draw a neat and labelled diagram of digestive system of frog. 5
(b). What is the role of bile and where is it stored?

OR

(a). Draw a neat and labelled diagram of male reproductive system of frog.

(b). What is the role of cloaca?

33. (a). Describe the structure of the following with the help of labelled diagrams nucleus and centrosome. 5

(b). What is a centromere? How does the position of centromere from the basis of classification of chromosomes support your answer with a diagram showing the position of centromere on different types of chromosomes?

OR

(a). Name two cell organelles that are double membrane bound .what are the characteristics of these two organelles? State their function and draw labelled diagrams of both.

(b). What is a mesosome in a prokaryotic cell?

**********ALL THE BEST**********