

CBSE GUESS PAPER

CLASS 11

BIOLOGY

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 33 questions. All questions are compulsory.
- (iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labeled diagrams should be drawn

SECTION - A

Q.No	Questions	Marks
1.	Scientific name are drawn from a. Latin b. English c. Sanskrit d. Arabic	1
2.	Taxonomy refers to a. Classification b. Nomenclature c. Identification d. All of these	1
3	Five kingdom classification proposed by a. Linneus b. Whittaker c. Lamark d. Aristotle	1

- | | | |
|-----|---|---|
| 4 | A unicellular organism often considered a connecting link between plants and animals, is | 1 |
| | <ul style="list-style-type: none"> a. Paramecium b. Entamoeba c. Monocystics d. Euglena | |
| 5. | Agar is obtained from | 1 |
| | <ul style="list-style-type: none"> a. Laminaria b. Porphyra c. Sargassum d. Gelidium | |
| 6. | Protonema stage is found in | 1 |
| | <ul style="list-style-type: none"> a. Green algae b. Liverworts c. Ferns d. mosses | |
| 7. | Calotes and testudo belongs to the class | 1 |
| | <ul style="list-style-type: none"> a. mammalia b. reptilia c. amphibia d. aves | |
| 8. | Bioluminescence is well marked in | 1 |
| | <ul style="list-style-type: none"> a. Platyhelminthes b. Cnideria c. Ctenophore d. Echinodermata | |
| 9. | Roots that grow from any part of the plant body other than the radicle are called | 1 |
| | <ul style="list-style-type: none"> a. Tap root b. Adventitious root c. Modified roots d. Aerial roots | |
| 10. | Drupe is recognized by | 1 |
| | <ul style="list-style-type: none"> a. Stony mesocarp b. Fleshy seedcoat c. Thin seed coat d. Stony endocarp | |

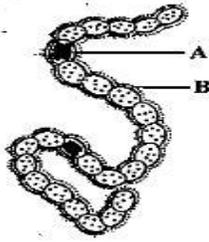
11. Age of a tree is calculated by 1
 a. Girth
 b. Height
 c. Number of annual rings
 d. Number of branches
12. Mesophyll cells in a leaf are 1
 a. Sclerenchymatous
 b. Collenchymatous
 c. Parenchymatous
 d. Meristem

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

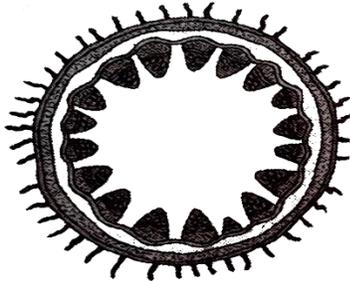
- A. Both A and R are true and R is the correct explanation of A.
 B. Both A and R are true and R is not the correct explanation of A.
 C. A is true but R is false.
 D. A is False but R is true.
13. Assertion- the alimentary canal of frog is short 1
 Reason- frogs are carnivore
14. Assertion the Indian bull frog *Rana tigrina* is poikilothermic animal. 1
 Reason- frogs do not have constant body temperature
15. Assertion: Leaf coloration is due to the presence of four pigments – Chlorophyll a, chlorophyll b, xanthophyll and carotenoids. 1
 Reason : Chlorophyll b is the chief pigment associated with photosynthesis.
16. Assertion : Glycolysis is the first step of respiration in which glucose completely breaks 1
 into CO₂ and H₂O.
 Reason : In this process, there is net gain of 24 molecules of ATP.

SECTION - B

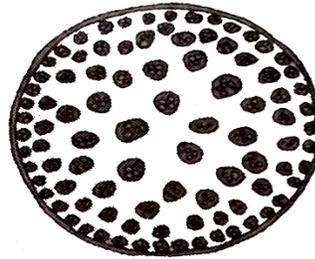
17. State the characters necessary for organisms to be called living? 2
18. Identify the following picture. Label A & B and describe it in brief. 2



- 19 Figures X and Y represent the transverse section of part of two plants. How would you ascertain whether it is a monocot stem/root or a dicot stem/root? 2



X



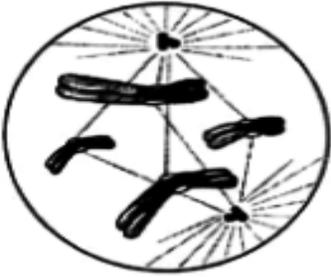
Y

- 20 Write the functions in brief in column B, appropriate to the structures given in column A. 2
- | Column A | Column B |
|-------------------------|----------|
| a. Nictitating membrane | i. |
| b. Tympanum | ii |
| c. Copulatory pad | iii |
| d. Webbed feet | iv |
- 21 Draw a well labelled diagram of Mitochondria. 2
- OR
- Justify the statement, "Mitochondria is power house of the cell."

SECTION - C

- 22 Define these terms:- 3
- i. Isogamy
 - ii. Anisogamy
 - iii. Oogamy
- 23 Illustrate a glycosidic and a peptide bond. 3
- 24 How is cytokinesis in plant cell differ from that in animal cells? 3

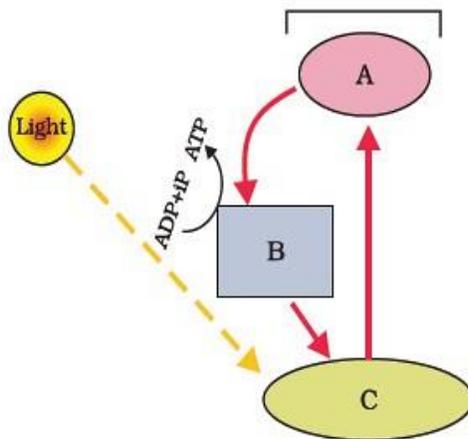
25 Label the diagram and also determine the stage at which this structure is visible. 3



26 Give a schematic representation of an overall view of Krebs's cycle. 3
 OR
 What are the main steps in aerobic respiration? Where does it take place?

27 Describe Arithmetic growth and Geometric growth. 3

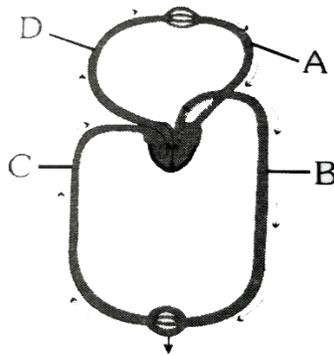
28 In the diagram shown below label A, B, C. What type of phosphorylation is possible in this? 3



SECTION - D

Q.no 29 and 30 are case based questions. Each question has subparts with internal choice in one subpart.

- 29 a. The schematic plan of complete double circulation in humans is shown in the figure. The blood flows through arteries and veins which consists of three layers- tunica intima, tunica media and tunica externa. Left and right atrium passes oxygenated and deoxygenated blood into the left and right ventricles. Ventricles then pump it out without mixing into aorta and pulmonary artery. The volume of blood pumped out by each of heart per minute is called cardiac output. 4



- I. Which of the following carries oxygenated blood during circulation?
- A
 - B
 - C
 - Both A and B
- II. Deoxygenated blood carried by _____.
- III. Define pulmonary and systemic circulation.

OR

What do you mean by Double circulation?

30. Blood is the medium of transport for O₂ and CO₂. About 97 per cent of O₂ is transported by RBCs in the blood. The remaining 3 per cent of O₂ is carried in a dissolved state through the plasma. Nearly 20-25 per cent of CO₂ is transported by RBCs whereas 70 per cent of it is carried as bicarbonate. About 7 per cent of CO₂ is carried in a dissolved state through plasma. 4

Haemoglobin is a red coloured iron containing pigment present in the RBCs. O₂ can bind with haemoglobin in a reversible manner to form oxyhaemoglobin. Each haemoglobin molecule can carry a maximum of four molecules of O₂. Binding of oxygen with haemoglobin is primarily related to partial pressure of O₂. Partial pressure of CO₂, hydrogen ion concentration and temperature are the other factors which can interfere with this binding. A sigmoid curve is obtained when percentage saturation of haemoglobin with O₂ is plotted against the pO₂. This curve is called the Oxygen dissociation curve and is highly useful in studying the effect of factors like pCO₂, H⁺ concentration, etc., on binding of O₂ with haemoglobin. In the alveoli, where there is high pO₂, low pCO₂, lesser H⁺ concentration and lower temperature, the factors are all favourable for the formation of oxyhaemoglobin, whereas in the tissues, where low pO₂, high pCO₂, high H⁺ concentration and higher temperature exist, the conditions are favourable for dissociation of oxygen from the oxyhaemoglobin. This clearly indicates that O₂ gets bound to haemoglobin in the lung surface and gets dissociated at the tissues. Every 100 ml of oxygenated blood can deliver around 5 ml of O₂ to the tissues under normal physiological conditions.

CO₂ is carried by haemoglobin as carbamino-haemoglobin (about 20-25 per cent). This binding is related to the partial pressure of CO₂. pO₂ is a major factor which could affect this binding. When pCO₂ is high and pO₂ is low as in the tissues, more binding of carbon dioxide occurs whereas, when the pCO₂ is low and pO₂ is high as in the alveoli, dissociation of CO₂ from carbamino-haemoglobin takes place, i.e., CO₂ which is bound to haemoglobin from the tissues is delivered at the alveoli. RBCs contain a very high concentration of the enzyme, carbonic anhydrase and minute quantities of the same is present in the plasma too.

1.) _____ of O₂ and CO₂ is carried in a dissolved state through the blood plasma.

- a) 3% and 8%
- b) 70% and 20%
- c) 3% and 9%
- d) 3% and 7%

2) Identify the correct statement

Statement 1 – 7 per cent of O₂ is carried in a dissolved state through the plasma

Statement 2 – 3 per cent of CO₂ is carried in a dissolved state through plasma.

Statement 3 – 70 per cent of CO₂ is carried as bicarbonate.

Statement 4 – 97 per cent of CO₂ is transported by RBCs.

- a) Both 1 & 2 are correct
- b) Both 3 & 4 are correct
- c) Only 1 is correct
- d) None of the above

3.) Name the factors which play key role in binding of oxygen and haemoglobin.

4.) How much oxygen can deliver to tissue per 100 ml of oxygenated blood in normal conditions?

SECTION - E

- 31 Write the functions of the following 5
- i. Centromere
 - j. Cell wall
 - k. Smooth ER
 - l. Golgi apparatus
 - m. Centrioles

OR

Explain the structure of ribosome. Name two organelles of cytoplasm in which they are found

32. Draw a labelled diagram showing reabsorption and secretion of major substances at different parts of the nephron. 5

OR

Explain briefly, micturition and disorders of the excretory system

33. Sarcolemma, sarcoplasm and sarcoplasmic reticulum refer to a particular type of cell in our body. Which is this cell and to what parts of that cell do these names refer to? Draw the diagram of a sarcomere of skeletal muscles showing different regions. 5

OR

Explain the structure of Contractile Proteins.