

**CBSE SAMPLE PAPER – 1**

**Class-XI**

**BIOLOGY (THEORY)**

**Time: 3 Hrs**

**MM: 70**

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**General Instructions**

1. The question paper comprises of five Sections A, B, C, D and E.
2. All questions are compulsory.
3. There is no overall choice however; internal choice has been provided in one question of 2 marks, one question of 3 marks and all the two questions of five marks category. Only one option in such question is to be attempted.
4. Questions 1 to 5 in section A are very short questions of one mark each. These are to be answered in one word or one sentence each.
5. Questions 6 to 9 in section B are short questions of two marks each. These are to be answered in approximately 20-30 words each.
6. Questions 10 to 20 in section C are questions of three marks each. These are to be answered in approximately 30-50 words each. Question 21 is of 4 marks.
7. Questions 22 to 23 in section D are questions of five marks each. These are to be answered in approximately 80-120 words each.
8. Questions 24 to 26 in section E is based on OTBA of 10 marks.

**Section – A**

1. What does identification mean?
2. Define phyllotaxy.
3. Define cell cycle.
4. Where is electron transport system operative in mitochondria?
5. What name is given to functional unit of kidney?

**Section – B**

6. How is a nerve impulse conducted along a non- myelinated nerve fibre.
7. Write a note on triglycerides.

Or

Explain haplontic and diplontic life cycles by giving examples.

8. What are Biomolecules?
9. Differentiate hyperglycemia and hypoglycemia.

### Section - C

10. Enumerate the peculiar features that you find in phylum chordata.
11. What was Van Niel's experiment? Give the equation of photosynthesis given by him
12. What are the muscle tissues? What are the three types of muscles found in human beings?
13. What are ERV and IRV? Give various steps involves in respiration.
14. Describe the process of crossing over. What is its significance?
15. Describe the structure of chloroplast.

Or

Draw a labelled diagram of female reproductive system of a cockroach.

16. Describe PSI and PSII
17. Describe the three types of spores formed by asexual reproduction in fungus
18. What is systemic circulation? Describe its importance. Why are the walls of the ventricle more muscular than the walls of atria?
19. Explain the initiation of muscle contraction. What is the role of sarcoplasmic reticulum, myosin head and F-Actin during contraction in striated muscles?
20. Describe the process of inspiration under normal conditions.
21. **Ramesh was rushed to a nearby hospital after an accident which caused a lot of blood loss. The hospital failed to supply O negative blood for transfusion. Abdul was attending a patient come to know about the situation and agreed to donate blood being the same blood group. Ramesh's mother initially refused but was later convinced by her daughter.**
  - a. What values do you find in Abdul?
  - b. Why O positive blood can't be transfused to Ramesh?
  - c. What is the basis of blood grouping?

### Section - D

22. Explain the system of ETS and oxidative phosphorylation.

Or

a) Which one of the plant growth regulator would you use, if you are asked to:

- i) Induce rooting in a twig
- ii) Quick ripening of a fruit
- iii) Delay in leaf senescence
- iv) Induce immediate stomatal closure in leaves
- v) Increase length of a dwarf plant

b) Define photoperiodism.

23. Draw a labeled diagram of the detailed structure of a nephron.

Or

Write a note on two types of simple tissues with neat diagram.

### **Section-E (OTBA) Questions**

24. OTBA Question	2 mark
25. OTBA Question	3 mark
26. OTBA Question	5 mark

**CBSE SAMPLE PAPER – 2**

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**Section – A**

1. What is cytotaxonomy?
2. How is phyllode helpful to a plant?
3. Define totipotency?
4. Name the basic unit of chitin molecule?
5. Which chlorophyll is termed as universal photosynthetic pigment?

**Section – B**

6. What is peristalsis? How does it help in digestion?
7. Why are starch and glycogen more suitable than glucose as storage products?

Or

Where is yellow bone marrow present? What is its fate in case of anemia?

8. What is water potential? Why is it negative in value?
9. Differentiate between parasympathetic and sympathetic nerves?

**Section - C**

10. How does calcium affect the process of muscle contraction?
11. Explain the main steps in aerobic respiration.
12. Why is posterior pituitary known as storage, releaser centre?
13. What is partial pressure? How does it help in gaseous exchange during respiration?
14. With the help of diagram only depict the events that occur during prophase I of meiotic division.
15. Which parts of the plant produce gibberellins? State two functions of this phytohormones.

Or

Draw a labelled diagram of female reproductive system of a cockroach.

16. Differentiate between absorption spectrum and action spectrum.
17. What are phospholipids? Briefly discuss their structure, properties and functions.
18. Name the enzyme for protein digestion in gastric, pancreatic and intestinal juices, substrate they digest, and the product of their action.
19. Define hygroscopic and capillary waters? Which is not available to plants and why?
20. Explain the general characters of Reptilia with respect to respiration, excretion and reproduction.

21. **Prabhakar is a son of a fisherman. He uses to go seashore along with father when he catches fishes using fishing net. Along with fishes, many other creatures comes out of water in net. Prabhakar use to throw them back in sea although his father do not care about it.**
- a. **What values do you find in Prabhakar?**
- b. **Why is use to throw back the other creatures back to sea?**
- c. **Name some species that might comes out of sea in fishing net.**

#### Section - D

22. Describe the C3 pathway. How it differ from C4 pathway?

Or

- a) Explain the different types of muscular tissues with diagram?
- b) Name the following
- i) Muscular tissues found in heart.
  - ii) Muscular tissue attached with bone.
  - iii) Animal tissues that form our skin
23. What are amino acids? Discuss their types and functions.

Or

Explain the mechanism of breathing in human being with neat suitable diagram.

#### Section-E (OTBA) Questions

- |     |               |        |
|-----|---------------|--------|
| 24. | OTBA Question | 2 mark |
| 25. | OTBA Question | 3 mark |
| 26. | OTBA Question | 5 mark |

**CBSE SAMPLE PAPER – 3**

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**Section – A**

1. What types of joints are found in skull bones and shoulder joint?
2. What is serum?
3. Define inspiratory reserve volume?
4. Mention two important functions of large intestine.
5. Why is the concentration of certain ions significantly higher in the vacuole than in the cytoplasm?

**Section – B**

6. What would happen if you forget to add cytokinins to the culture medium of plant tissue culture?

7. What is hydroponics? How is it carried?
8. What is binomial nomenclature? Explain with an example.
9. Differentiate parenchyma and collenchyma.

Or

Give the overall equation of the chemical changes that take place in pyruvic acid during aerobic respiration in mitochondria.

### **Section - C**

10. Differentiate hyperglycemia and hypoglycemia.
11. Cell is the basic unit of life. Discuss.
12.
  - a) Name two red algae from where agar is obtained.
  - b) Write the structural formula of adenosine.
13. What is photophosphorylation? Name its types and differentiate them.
14. Describe the secondary structure of proteins. Give an example.
15. Differentiate open circulation and closed circulation.

Or

Explain the mechanism of generation of light-induced impulses in the retina.

16. Explain three common symptoms of deficiency of mineral nutrients in plants with example of an element that causes each of them.
17. Enumerate the chemical events that occur in the process of blood clotting.
18. Write six distinguishing features of class Mammalia.
19. What is pulmonary circulation? Describe its importance.
20. Describe competitive inhibition of enzyme activity with an example.

21. **Radhika and Rekha are good friend. Radika father is a doctor but Rekha father is a worker in asbestos factory. One day Radhika visits to Rekha's home. She observed that her father is suffering from fibrosis and inflammation of lung with regular coughing. Radhika took them to her father clinic for diagnosis.**
- a. **What values do you find in Radhika?**
  - b. **What is the possible cause of this disease?**
  - c. **What common name is given to this kind of disease?**

**Section - D**

22. Draw an animal cell as seen under an electron microscope and label 10 parts in it.

Or

Define turgor pressure. Describe the opening and closing of stomata with an emphasis on the role of potassium ions in the process.

23.

- a) What is centromere?
- b) How does the position of centromere form the basis of classification of chromosomes?
- c) Support your answer with a diagram showing the position of centromere
- d) on different types of chromosomes.

Or

- a. What is photoperiodism?
- b. How are plants classified based on their photoperiodic response?
- c. Explain with an example each.

**Section-E (OTBA) Questions**

- |     |               |        |
|-----|---------------|--------|
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| 25. | OTBA Question | 3 mark |
| 26. | OTBA Question | 5 mark |

**CBSE SAMPLE PAPER – 4**

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**Section – A**

1. Define plasmolysis.
2. Give one difference between acrocentric and telocentric.
3. Define isotonic.
4. Define synapsis.
5. What is coronary system in circulation?

**Section – B**

6. Differentiate fibrous joints and cartilaginous joints.
7. Why bile juice contains no digestive enzymes yet it is important for digestion?

or

The content of nucleolus is continuous with that of nucleoplasm. Comments.

8. What are the functions of Golgi complex?
9. Differentiate hyperglycemia and hypoglycemia.

**Section - C**

10. Describe the process of inspiration under normal conditions.
11. Describe the three types of spores formed by asexual reproduction in fungi.
12. Describe the structure of cell wall of a plant

Or

Describe the female reproductive system of cockroach.

13. Draw a labelled diagram of a plant cell in Anaphase I.
14. Give the structural formula of glycerol and lecithin.
15.
  - a) What is parthenocarpic fruit?
  - b) Why the maize grain is not called as a seed?
  - c) What is vermicomposting?
16. What was Van Niel's experiment? Give the equation of photosynthesis given by him.
17. Give reason Enumerate the peculiar features that you find in phylum chordata.
18. Describe the disorders of Myasthenia gravis.
19. Name the following along with their sources a) pregnancy hormone and b) anti-diuretic hormone.
20. Describe in detail the cohesion theory of water transport.
21. **Raman and Deepak are good friends. Raman is tall but Deepak is dwarf. Deepak feels depressed due to less height. One day Deepak meets a local doctor, who advised him to take some medicine to increase his height. Next day Deepak talk the same to his friend. Who forbade him to take such medicine as it is not possible to increase the height by using medicine?**
  - a) **What values do you find in Raman?**
  - b) **Name the hormone that controls the height.**
  - c) **What is the basis of Raman's conclusion?**

### **Section - D**

22. Draw any five different shapes of prokaryotic cells. Name them.

Or

Explain TCA cycle in detail.

23. Schematically represent the interrelationship among the metabolites that undergo respiration mediated break down.

Or

Explain the steps in urine formation in a human kidney.

### **Section-E (OTBA) Questions**

- |     |               |        |
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**Section – A**

1. Why slime moulds are called fungus-animals?
2. Which hormone is called immunosuppressive and a stress hormone?
3. Define taxon.
4. What is mycoplasma? Mention its other name.
5. What is the cause of erythroblastosis foetalis?

**Section – B**

6. What are liverworts? Why are they so called?
7. What is GLUT – 4? Give its role in cell.

8. Draw the erythrocytic cycle of malarial parasite in a human being.

Or

What are chrysophytes? Give their characteristics with suitable examples.

9. Describe the functions of the plastid.

### **Section - C**

10. Give reason: "Krebs cycle is also known as amphibolic pathway".

11. What is GERL system? Give two functions of the related cell organelle?

12. A nerve cell releases 36 ATPs whereas a kidney cell releases 38 ATPs by complete oxidation of one gram mole of glucose. Why?

a) What is fungi imperfecti?

b) Outline the classification of kingdom fungi

13. What are ERV and IRV? Give various steps involves in respiration.

14. What is synapse? Explain how nerve impulse is transmitted across a synapse?

a) Give outline classification of chordates with example of each major group.

b) Give two diagnostic characters of chordata.

Or

a) Give outline classification of plant kingdom with examples of each major group.

b) Give two diagnostic characters of gymnosperms.

15. Give the difference between open and closed vascular bundles.

16. Define

a) Exocrine gland

b) Endocrine gland and

c) Hormone with suitable examples.

17. Explain the general structure of synovial joints with example.
18. What is meant by biological nitrogen fixation? Explain the process of biological nitrogen fixation.
19. Describe the process of crossing over. What is its significance?
20. Give the mechanism of clotting of blood.
21. **Mohan and Yashpal are friends. There is a huge banyan tree on the boundary of Yashpal field. One day Yashpal decided to cut the tree as it's fruit is of no use and wood is of inferior quality. Mohan stopped him from cutting the tree and explain the importance of tree and finally Yashpal agreed to not cutting the tree.**
  - a) **What values do you find in Mohan?**
  - b) **Who plants help in gaseous balance in nature?**
  - c) **What are other uses of plants besides fruits**

#### Section - D

22. Explain the stages involved in meiosis – I in animal cell with neat sketch.  
Or
  - a) Describe synapsis, chiasmata and bivalent with neat sketch.
  - b) Give the significance of meiosis.
23. Explain how hearing and maintenance of is body balance achieved in human beings?  
Or  
Explain the process of conduction of nerve impulse.

#### Section-E (OTBA) Questions

- |     |               |        |
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