



# BIOLOGY

## BOOKS - SUPER COMPANION 5 IN 1

### PU BOARD QUESTION PAPER 02

#### Part A

1. What is a herbarium ?



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2. Define venation ?



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3. "Earthworms are called friends of farmers".

Justify the statement.



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4. What are chromoplasts ?



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5. Name the organic compounds (non-protein constituent) present in certain enzymes that are tightly bound to the apoenzyme.



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6. Why are mitochondria called "power houses of the cell"?



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7. Define osmosis.



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8. Name the essential element that is present in chlorophyll.



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9. Name the red coloured oxygen storing pigment present in muscles.





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## Part B

1. Mention the hormone that regulates 24-hour (diurnal) rhythm of human body.



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2. State any two universal rules of binomial nomenclature.



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3. Write any two classes of Kingdom Fungi with one example for each class.



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4. Why bryophytes are called amphibians of the plant kingdom ?



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5. Cycas is considered as a naked seeded plant.

Give a scientific reason.



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6. Write any five differences between cartilage and bonyfishes .



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7. List two functions of Golgi bodies.



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8. Define respiratory quotient. Write the RQ value for glucose.



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9. Differentiate long day plants and short day plants.



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**10.** Mention two types of movements exhibited by the cells of human body with an example for each.



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## Part C

**1.** Schematically represent the haplontic life cycle in plants.



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2. Explain any three types of aestivation in flowering plants.



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3. Differentiate homopolymers and heteropolymers (polysaccharides) with an example each.



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4. Write the schematic representation of steps involved in the formation of ethyl alcohol during fermentation of glucose.



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5. Write about any three disorders of the digestive system.



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6. What is : (a) Tidal volume, (b) Residual volume, (c ) Vital capacity?



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7. How are differentiation, dedifferentiation and redifferentiation different from each other ?



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**8.** Classify the animals with an example each based on the chief excretory product produced in them.



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## Part D

**1.** List five characteristic features of birds.



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2. Describe the important events that occur during anaphase and telophase of mitosis.



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3. Draw labelled diagram showing the anatomy of the leaf of a typical monocot plant.



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4. Carbon, nitrogen, phosphorous, sulphur, calcium, etc, are considered as essential elements. What are the criteria for considering them as essential ?



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5. What is the role of leg-haemoglobin in leguminous plants ?



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6. Name a soil bacterium which helps in nitrification.



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7. Write the schematic representation of Calvin cycle.



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**8.** Mention one function each of the following hormones :

ADH



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**9.** Mention one function each of the following hormones :

Thymosin



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**10.** Mention one function each of the following hormones :

Glucagon



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**11.** Mention one function each of the following hormones :

Atrial natriuretic factor



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**12.** Which of the following cells release erythropoietin hormone ?



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**13.** Draw a labelled diagram showing the ultrastructure of a plant cell.



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**14.** Classify simple epithelium and mention the structural modifications of cells in them.



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**15.** Explain pressure flow hypothesis of translocation of organic solutes.



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**16.** Explain the mechanism of coagulation of blood.



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17. Differentiate pulmonary and systemic circulations.



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