

# BIOLOGY QUESTION PAPER

Time : 2 Hrs.

Max. Marks : 40

**Q.1 :** Select and write the most appropriate answer from the given alternatives in each sub-question.

- (i) Which one of the following can be used as a bio-weapon ..... (1)  
(a) *Bacillus anthracis* (b) *Bacillus thuringiensis*  
(c) *Lactobacillus* (d) *Saccharomyces cerevisiae*
- (ii) In tissue culture, polyethylene glycol (PEG) is commonly used as ..... (1)  
(a) Hormone (b) Vitamin  
(c) Antibiotic (d) Fusogen
- (iii) Which plants do not generate root pressure ? (1)  
(a) Grasses (b) Perennial shrubs  
(c) Conifers (d) Seasonal herbs
- (iv) Capillarity theory fails to explain ascent of sap in Gymnosperms and Pteridophytes because they ..... (1)  
(a) contain xylem with vessels (b) contain tracheids with end walls  
(c) lack sieve tubes in phloem (d) lack end walls in tracheids
- (v) In Kreb's cycle, the acid which undergoes oxidative decarboxylation is ..... (1)  
(a) Citric acid (b) Oxalosuccinic acid  
(c) Malic acid (d)  $\alpha$  - Ketoglutaric acid
- (vi) During photosynthesis, the process which occurs first is ..... (1)  
(a) Photolysis of water (b) Ionization of chlorophyll  
(c) Synthesis of ATP (d) Synthesis of  $\text{NADPH}_2$
- (vii) The minimum number of meiotic divisions required to produce 120 Viable seeds in Pea plant is ..... (1)  
(a) 150 (b) 60  
(c) 120 (d) 90
- (viii) The types of pollination exhibited by *Vallisneria* and *Zea mays* respectively are - ..... (1)  
(a) Anemophily and Hydrophily (b) Entomophily and Hydrophily  
(c) Hydrophily and Anemophily (d) Hydrophily and Entomophily

**Q. 2 :** Answer the following :

[8]

- (A) Enlist various methods to conserve fresh water resources. OR  
What is remote sensing ? Give its advantages in relation to vegetation.
- (B) What are biofertilisers ? Give the role of *Rhizobium* as biofertilizer. OR  
Write a note on nutritive values of mushrooms.
- (C) Define seed germination and give the conditions required for seed germination.
- (D) Draw a labelled diagram showing epigeal germination.

**Q. 3 :** Answer the following questions :

[8]

- (A) What are the hazards of deforestation ?
- (B) Enlist medicinal uses of *Ocimum sanctum*. OR  
Describe the structure of Angiospermic pollen grain.
- (C) Sketch and label female gametophyte of Angiosperms.
- (D) What is biopiracy ? Give any 'two' examples. OR  
Distinguish between  $\text{C}_3$  and  $\text{C}_4$  Pathways.

**Q. 4 :** Attempt any Two of the following :

[8]

- (A) Explain source of oxygen in the process of photosynthesis.
- (B) Explain different phases of growth curve.
- (C) Describe mechanism of opening and closing of biopiracy.

**Q. 5 :** Answer the following questions:

[8]

- (A) Give an account of double helical model of D.N.A. OR  
Describe any two natural methods of vegetative propagation.
- (B) Describe in brief ETS.