

Q.P. Code : 00216

[Time: Three Hours]

[Marks:100]

Please check whether you have got the right question paper.

- N.B:
1. **All** the questions are **compulsory**.
 2. **Figures** to the **right** indicate full marks.
 3. **Draw** neat and labelled diagrams wherever **necessary**.

Q.1 (A) Choose the **correct** option from the following:

10

- (a) _____ suggested the Fluid Mosaic Model.
 i) Singer & Nicholson ii) Robertson iii) Lindeman iv) Odum
- (b) Dark reaction of photosynthesis takes place in _____.
 i) grana of Chloroplast ii) stroma of Chloroplast iii) membrane of Mitochondria iv) Lysosomes
- (c) Middle Lamella of plant cell wall is mainly composed of _____.
 i) Cellulose ii) Pectin iii) Hemicellulose iv) Lignin
- (d) _____ cannot be recycled in an Ecosystem.
 i) Water ii) Nutrients iii) Energy iv) Air
- (e) 'Energy can neither be created nor destroyed, it can only be converted from one form to another', is _____ Law of Thermodynamics.
 i) 1st ii) 2nd iii) 3rd iv) 4th
- (f) Lentic is _____ type of Ecosystem.
 i) Freshwater ii) Marine iii) Desert iv) Grassland
- (g) Plants are _____ of Ecosystem.
 i) primary consumers ii) decomposers iii) tertiary consumers iv) producers
- (h) _____ is a possible abbreviation for a genotype.
 i) BC ii) Pp iii) Ty iv) fg
- (i) The genes present on an organism represents the organism's _____.
 i) Genotype ii) Phenotype
 iii) Physical traits iv) Behavioural traits
- (j) In duplicate dominant epistasis, the Mendel's dihybrid ratio of 9:3:3:1 is changed to _____.
 i) 9:3:4 ii) 15:1 iii) 9:7 iv) 12:3:1

Q.P. Code : 00216**Q.1 (B)** Answer the following in **one sentence**:**10**

- (a) What are tubules?
- (b) Define Desmosomes.
- (c) Give the vertical zonation in Ocean.
- (d) Define Ecosystem.
- (e) What is a genotype?

Q.2 Answer **any two** from the following:**20**

- (a) Explain the structure of a plant cell.
- (b) Describe the ultrastructure and functions of Endoplasmic Reticulum.
- (c) Write a note on ultrastructure and functions of Chloroplast.
- (d) Describe the Fluid Mosaic Model to explain the structure of a plasma membrane.

Q.3 Answer **any two** from the following:**20**

- (a) Explain energy flow in an ecosystem with the help of any one energy flow model.
- (b) Define Ecosystem and give an account of its different components.
- (c) Discuss the Laws of Thermodynamics in an Ecosystem.
- (d) Discuss different components of Desert Ecosystem.

Q.4 Answer **any two** from the following:**20**

- (a) Explain the terms 'Co-dominance' and 'Intermediate Inheritance' with suitable examples.
- (b) Define and explain Mendel's Law of Independent Assortment giving suitable example.
- (c) Define epistasis. Explain dominant epistasis with a suitable example.
- (d) Two non-allelic genes govern the plumage in Parakeet. The genotype **BY** produces green plumage, **Byy** produces blue, **bbY** produces yellow and **bbyy** produces white plumage. Give the phenotype of the parents, genotype and phenotype of progeny and phenotypic ratio in the following crosses:
 - i) $Bbyy \times bbyy$
 - ii) $BbYy \times BByy$

Q.5 Write short notes (**Any four**):**20**

- (a) Functions of Cell wall.
- (b) Functions of Cell membrane.
- (c) Fresh water Ecosystem.
- (d) Pyramid of Biomass.
- (e) ABO blood groups in man.
- (f) Mendel's seven characters of pea plant.