

**Answer key**

**Q.1. A. Choose correct option:**

- a. Singer and Nicholson
- b. DNA
- c. Pectin
- d. Grana of Chloroplast
- e. 10%
- f. Teak
- g. Grazing
- h. Homozygous dominant
- i. 9:3:4
- j. 1:1:1:1

**Q.1. B. Answer in one sentence**

- i. Definition- Stroma – 2 marks
- ii. Definition - Pinocytosis – 2 marks
- iii. Law of Thermodynamics – The first **law**, also known as **Law** of Conservation of Energy, states that energy cannot be created or destroyed. - 2 marks
- iv. Taiga/ tundra/ deciduous forest/ grasslands/ tropical rain forests/ deserts. – any 2 1 mark each.
- v. Test Cross Definition A **cross** between F1 hybrid and its homozygous recessive parent.– 2 marks

Q.2. a. Description of Ultrastructure of ER - 4 Marks and Diagram -4 marks  
Functions – 2 marks

Q.2.b. Description of Ultrastructure of Chloroplast - 4 Marks and Diagram -4 marks  
Functions – 2 marks

Q.2. c. Description of Ultrastructure of Cell wall - 5 Marks and Diagram -5 marks

Q.2. d. Diagram of Fluid mosaic model – 5 Marks  
Structure description – 5 marks

Q.3. a. Definition of ecosystem – 1 mark  
Different components of Ecosystem – description with examples – 9 marks

Q.3. b. Ecological Pyramids – Meaning & Description – 2 marks  
Three Types – (Number/ Biomass/ Energy) – Description/ Explanation 8 Marks

Q.3.c. Y- Shaped energy flow model – Diagram 4 Marks  
Description – 6 marks

Q.3.d. Meaning of estuarine ecosystem – 2 marks

Description of Components of ecosystem – 8 marks

Q.4.a. Recessive Epistasis – Explanation – 5 Marks

Example with F1 and F2 phenotypes and genotypes – 5 Marks

Q.4.b. Co-dominance – Description with one example – 5 marks

Incomplete Dominance – Description with one example – 5 marks

Q.4.c. Multiple alleles - Meaning- 2 marks

Example – Inheritance of Blood Groups in Humans- 8 Marks

Q.4.d. i)  $WwYy \times WWYy$  - Phenotype and Genotype of the parents and progeny - 4 marks, phenotypic ratio – 1 mark

ii)  $wwYy \times wwyy$  - Phenotype and Genotype of the parents and progeny - 4 marks, phenotypic ratio – 1 mark

Q.5. short notes on (any four)

a) Active & Passive Transport – Explanation – 2.5 marks each

b) Functions of Plasma Membrane (5 functions) – 5 Marks

c) Food web – Meaning – 1 mark; explanation – 4 marks

d) Grassland ecosystem – Meaning – 1 mark; explanation- 4 marks

e) Back cross – definition – 1 mark; explanation with example – 4 marks

f) Monohybrid ratio – meaning 1 mark; explanation with example – 4 marks

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