

Please check whether you have got the right question paper.

N.B:1. All 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. Secondary cell wall of xylem tissue is made up of _____
i) cellulose & lignin ii) cellulose & pectin
iii) hemicellulose iv) cellulose & glycoproteins
- b. The dark reaction of the photosynthesis takes place in _____
i) Grana of chloroplast ii) Stroma of chloroplast
iii) membrane of mitochondrion iv) Lysosomes
- c. Fatty acids are abundant in _____
i) Plasma membrane ii) Ribosomes iii) DNA iv) RNA
- d. The simplified energy flow model proposed by _____
i) S P Odum ii) E P Odum iii) H T Odum iv) R T Odum
- e. The successive energy transfer from each trophic level to another is about _____ %
i) 1 ii) 5 iii) 10 iv) 20
- f. Complete the food chain in pond ecosystem:
_____ → Zooplanktons → Small Fish → Large Fish
i) Insect ii) Frog iii) Mammals iv) Phytoplankton
- g. The type of inheritance pattern where neither gene dominates completely over the other and partially expresses itself is called
i) Dominance inheritance ii) Intermediate inheritance
iii) Recessive inheritance iv) Incomplete inheritance
- h. Whenever a gene at one locus on a chromosome influences the expression of a gene at other locus, the 1st gene is said to be _____ to the 2nd.
i) hypostatic ii) epistatic iii) dominostatic iv) recessive
- i. When F₁ is crossed with pure recessive parent, it is called as
i) Back cross ii) test cross iii) Double cross iv) check cross
- j. When a tall plant with rounded seeds (TTRR) is crossed with a dwarf plant with wrinkled seeds (ttrr), the F₁ generation consists of tall plants with rounded seeds. how many types of gametes would be produced by an F₁ plant?
i) 1 ii) 3 iii) 4 iv) 8

- Q.1 B) Answer the following in **one sentence**: 10
- Which type of ribosomes is present in a Eukaryotic cell?
 - How many membranes are present in Endoplasmic reticulum?
 - State the second Law of thermodynamics with an example.
 - What is Detritus food chain?
 - Define test cross
- Q.2 Answer **any two** from the following: 20
- Describe the ultra-structure of plasma membrane. Add a note on its functions.
 - Describe the structure and chemical composition of cell wall.
 - With the help of a neat and labeled diagram, describe the structure of a typical eukaryotic plant cell.
 - Describe the ultra-structure and function of chloroplast. Support your answer with neat labeled diagram.
- Q.3 Answer **any two** from the following: 20
- Describe the Structure and Function of Ecosystem.
 - Describe Upright energy flow model in detail.
 - What is energy pyramids? Add a note on its types.
 - Discuss the Ecological Food chain in detail.
- Q.4 Answer **any two** from the following: 20
- Define Monohybrid ratio. Citing suitable examples, explain variations in monohybrid ratio with reference to "Intermediate inheritance" and "Co-dominance"
 - What is Epistasis? Explain recessive epistasis citing suitable example.
 - State and explain law of dominance.
 - Explain complete and incomplete dominance giving examples
- Q.5 Write Short note on **(any four)**: 20
- Dihybrid ratio
 - Multiple alleles.
 - Marine Food Web
 - Simplified energy flow model
 - Types of endoplasmic reticulum
 - Lipids in plasma membrane