

[Time: Three Hours]

[Marks: 100]

Please check whether you have got the right question paper.

- N.B:** i) All questions are compulsory
 ii) Figures to the right indicate full marks
 iii) Draw neat and labeled diagrams whenever necessary

Q.1.(A) Choose the correct option from the following and rewrite the sentence 10

- Maximum percentage of _____ constitutes the plasma membrane.
 i. lipids ii. carbohydrates iii. proteins iv. nucleic acids
- The ER membrane consist of cisternae, _____ and tubules
 i. vesicles ii. vacuoles iii. networks iv. threads
- Inner membrane of chloroplast is _____
 i. selectively permeable ii. non permeable
 iii. fully permeable iv. All of these.
- _____ forest show a storied structure.
 i. Tropical evergreen ii. Tropical deciduous iii. Desert iv. Littoral & Swamp
- _____ coined the term Ecosystem.
 i. Tansley ii. Odum iii. Haeckel iv. Tansley
- _____ ecosystem covers almost 70% of earth's surface.
 i. Desert ii. Terrestrial iii. Marine iv. Grassland
- When a gene at one locus on a chromosome influences the expression of a gene at another locus, it is called as _____ type of gene interaction.
 i. Hypostatic ii. Hyperstatic iii. Epistatic iv. Apostatic
- _____ represents physical appearance of trait in an organism.
 i. Phenotype ii. Genotype iii. Locus iv. Gene
- _____ epistasis shows 15:1 modification of dihybrid ratio.
 i. Duplicate recessive ii. Duplicate dominant iii. Recessive
 iv. Dominant
- Incomplete dominance *Mirabilis jalapa* shows _____ phenotypic and genotypic ratio.
 i. 9:3:3:1 ii. 3:1 iii. 1:2:1 iv. 9:7

Q.1. B Answer the following in one sentence 10

- Mention types of ER present in plant cell
- Define quantasomes.
- Why estuarine ecosystem are highly productive ?
- What is food web?
- Define a test cross.

Q.2. Answer any two of the following.

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- Give an account of chemical and physical composition of plant cell wall.
- Describe the ultra-structure of chloroplast.
- Explain fluid mosaic model of plasma membrane.
- Describe in detail the structure of plant cell.

Q.3. Answer any two of the following.

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- Discuss laws of thermodynamics in an ecosystem.
- Briefly explain biotic and abiotic components of an ecosystem.
- Explain Y shaped energy flow model.
- Discuss different components of fresh water ecosystem.

Q.4. Answer any two of the following.

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- Define epistasis. Explain recessive epistasis with a suitable example.
- Explain complete and incomplete dominance with examples.
- What are multiple alleles. Explain with reference to inheritance of blood groups in man.
- 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 x bbYy

ii) BbYy x BByy

Q.5. Write short notes on any four

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- Types of endoplasmic reticulum
- Plasmodesmata and its functions
- Tropical deciduous forest
- Pyramid of Biomass
- Dominant Epistasis
- Law of segregation
