

## **Botany (Hons.) Paper-VI**

*Answer five questions, selecting two from each Group, in which Q.No. 1 is compulsory.*

1. Tick the correct answer of the following :

- (a) The plasma membrane shows formation of food vacuoles by :  
 (i) Pinocytosis (ii) Phagocytosis  
 (iii) Both (i) and (ii) (iv) Ephagy
- (b) The nucleolus is chemically composed of :  
 (i) RNA and DNA only (ii) RNA, DNA and Protein  
 (iii) DNA and Protein only (iv) None of these
- (c) Catabolic and metabolic enzyme are present inside the :  
 (i) Ribosome (ii) Lysosome (iii) Gogi complex (iv) Mitochondria
- (d) Endoplasmic reticulum is mainly concerned with :  
 (i) Cholesterol synthesis (ii) Proteolysis  
 (iii) Fatty acid and synthesis (iv) Peptide bond formation
- (e) The Golgi participates in :  
 (i) Nitrogen Metabolism (ii) Nucleic Acid Metabolism  
 (iii) Phosphorus Metabolism (iv) Sulphur Metabolism
- (f) Mark the phase of longest duration :  
 (i) Prophase (ii) Metaphase  
 (iii) G1-phase (iv) S-phase
- (g) Mutations are :  
 (i) Always useful (ii) Rarely useful  
 (iii) Mostly useful (iv) Always useful
- (h) Datura is a classical example of :  
 (i) Trisomic (ii) Triploid  
 (iii) Monosomic (iv) Menoploid
- (i) Which one is a Polyploidy inducing agent ?  
 (i) Alcohol (ii) Salt  
 (iii) EMS (iv) None of these
- (j) The Peroxisomes are rich in :  
 (i) Catalases (ii) Peroxidases  
 (iii) Both (i) and (ii) (iv) None of these

### **Group-A**

2. Describe the structure and function of Mitochondrion.
3. Write short notes on any two of the following : LNMUonline.com  
 (a) Golgi apparatus (b) Ribosomes (c) Cell theory
4. Give an account of structure and function of endoplasmic reticulum.
5. Write short notes on any two of the following :  
 (a) Nuclear matrix and Nucleoplasm (b) Viroids and Prions (c) Cytokinesis

### **Group-B**

6. What is interaction of Genes ? Explain it with the help of two examples.
7. Define Polyploidy. Mention its types and induction by artificial means.
8. What is Translocation ? Mention cytology of a translocation heterozygote.
9. Define Point Mutation. Give an account of its induction and role in crop improvement.
10. Write short notes on any two of the following : LNMUonline.com  
 (a) Hybrid vigour (b) Introduction and Acclimatization (c) Hybridisation