

Time – 2 ½

Marks – 75

- N.B.
1. All questions are compulsory.
 2. Draw neat labeled diagrams wherever necessary.
 3. All questions carry equal marks.

Q.1 Attempt any two

15

- a Explain Munch hypothesis to explain Rapid-slow movement mechanism regarding sieve tube translocations.
- b What are Lipids? Describe the structure of fatty acids.
- c Explain briefly respiratory metabolism in germinating seeds.
- d What is active transport? Explain in detail various modes of active transport of solutes in plants.

Q.2 Attempt any two

15

- a What are induced mutations? Describe role of any two classes of mutagens bases on their mechanism of action.
- b What is the molecular basis of spontaneous mutation? Describe de-purinations a cause of spontaneous mutations.
- c Give an account of effect of substitution mutation on phenotypes (any two types)
- d Explain briefly construction of chromosome map in *Neurospora*.

Q.3 Attempt any two

15

- a What is bioremediation? Discuss the principles involved in bioremediations.
- b What is phytoremediation? Discuss the various processes involved in phytoremediation of organic pollutants.
- c What is biomagnification? Give its significance with case studies in aquatic ecosystem.
- d Give an account on microbial population in bioremediations.

Q.4 Attempt any two

15

- a Given an account of phytogeographical regions of India.
- b Discuss various approaches by which biodiversity can be conserved.
- c What is biodiversity? Describe the different levels of biodiversity.
- d Explain briefly Tropical forest in India.

Q.5 Attempt any two

15

- a Phytodegradation
- b Importance of biodiversity
- c Frame shift mutation
- d Role of tautomers in causing replication
- e Passive transport
- f β -oxidation