

2017

Full Marks : 40

Time : 2 hours

*All Question carry equal marks.
Answer any four questions from any
one group as per your specialization.
Draw neat labeled diagrams wherever necessary*

Group - A
(Environmental Biology)

1. (a) Give a brief description on acclimation and acclimatization.
(b) What are bioassays ? Discuss different bioassays and their significance.
2. (a) Write note on antagonism and its importance.
(b) What are ionising radiation ? Explain different types of ionizing radiation in environment.
3. (a) What is primary production ? Explain different methods for measurement of primary production.
(b) Give a brief account of natural habitat conservation in Odisha with special reference to Chilika Lake.
4. (a) Write note on afforestation and forest management.
(b) Write note on soil conservation and its significance.
5. (a) Give a brief account of environmental management system and its application.
(b) Write note on sewage treatment and its importance.
6. (a) Discuss biological control of pests. How is it advantageous over chemical control ?
(b) Write note on treatment of effluents in paper and pulp industry.

(Turn over)

Group - B
(Biotechnology)

1. (a) Discuss the role of plasmids as cloning vectors in recombinant DNA technology. Why are plasmids lost through propagation of bacterial strains in the laboratory ?
(b) Write note on anchored PCR and its application.
2. (a) Explain Sanger's methods of DNA sequencing. What are the advantages of Sanger's method over Maxam Gilbert method ?
(b) What are enzymes ? Discuss different classes of enzymes.
3. (a) How are transgenic animals made ? Add a note the ethical issues associated with it.
(b) Write note on ovule culture and its application.
4. (a) What is targeted gene transfer ? How is it used in gene therapy ?
(b) Write note on protoplast culture and its application.
5. (a) Give a brief outline of protein engineering. Add a note on its application.
(b) Write a note on application of biotechnology in paper industry.
6. (a) Discuss in brief isolation and culture of industrially important microorganisms.
(b) What are biosensors ? What role do they play in environmental pollution management ?