

22495

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks**1. Solve any FIVE :****10**

- (a) State any two branches of Environmental microbiology.
- (b) Define agricultural microbiology.
- (c) Define Magnification.
- (d) State any two general characters of viruses.
- (e) Distinguish between sterilization and disinfection.
- (f) State types of pollution.
- (g) Define water microbiology.

2. Solve any THREE :**12**

- (a) Write a note on microbial association highlighting its types and example.
- (b) Write a note on culture media highlighting its types.
- (c) Draw a neat sketch of compound microscope and label its components.
- (d) Write a note on sewage microbiology highlighting its (i) Definition (ii) types of sewage (iii) characterization of sewage.



- 3. Attempt any THREE :** **12**
- (a) Write a note on sterilization.
 - (b) Write a note on water born diseases-highlighting atleast two diseases in brief.
 - (c) Distinguish between adsorption & absorption process.
 - (d) Write a note on photochemical smog in brief.
- 4. Attempt any THREE :** **12**
- (a) Write a note on (i) streak plate method (ii) pour plate method.
 - (b) Write a note on bacteriological analysis of water for coliforms.
 - (c) State impact of microorganisms in sewage.
 - (d) Write a note on (i) catalysis (ii) photocatalysis.
 - (e) Write note on ozone layer depletion.
- 5. Attempt any TWO :** **12**
- (a) Define auxochrome & chromophore. Explain simple staining & gram staining.
 - (b) State importance of Environmental chemistry as applied to Environmental Engineering & types of reactions.
 - (c) Write a note on photochemical & chemical reactions in the atmosphere.
- 6. Solve any TWO :** **12**
- (a) Define pollution and highlight its types & sub types of it (i) Natural & (ii) artificial & its impacts.
 - (b) Write a note on chemical composition of atmosphere (i) primary pollutants (ii) secondary pollutants (iii) particles (iv) Ions & radicals.
 - (c) Draw a general flow chart of sewage treatment method & give its brief description.
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