

(6 pages)

Reg. No. : .....

Code No. : 20334 E Sub. Code : CNCH 32

U.G. (CBCS) DEGREE EXAMINATION,  
APRIL 2025.

Third Semester

Chemistry

Non-Major Elective — WATER MANAGEMENT

(For those who joined in July 2021 and 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is the major reason for algal bloom?
  - (a) Presence of heavy metals
  - (b) Contamination of pathogens
  - (c) Eutrophication
  - (d) Soil erosion

2. Pharmaceutical pollutant is due to
  - (a) Bacteria
  - (b) Hormones
  - (c) Mercury
  - (d) None
3. The most common cause of acidity in water is
  - (a) Oxygen
  - (b) Nitrogen
  - (c) Hydrogen
  - (d) Carbondioxide
4. The bone disaster or bone damage is caused by the presence of \_\_\_\_\_ in water.
  - (a) Fluoride
  - (b) Lead
  - (c) Manganese
  - (d) Cadmium
5. Which of the following is not a unit process in water treatment systems?
  - (a) Coagulation
  - (b) Adsorption
  - (c) Flocculation
  - (d) Softening
6. Reverse osmosis is done using
  - (a) Activated charcoal
  - (b) Semipermeable membrane
  - (c) Ion exchange resin
  - (d) Trickling filters

7. Skimming removes
- (a) Wood (b) Sand  
(c) Particles (d) Oily substances
8. Ion exchange method is used in removal of
- (a) Toxic materials (b) Pesticides  
(c) Oil and grease (d) None
9. Indian rivers are mostly polluted by
- (a) Domestic and municipal sewage  
(b) Industrial effluents  
(c) Agricultural run-off  
(d) All of these
10. The Ganga river covers \_\_\_\_\_ states of India.
- (a) 6 (b) 8  
(c) 7 (d) 9

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the role of Agricultural discharges of water pollution.  
Or  
(b) Write a note on pharmaceutical pollutants.
12. (a) Define pH of water. How are they measured?  
Or  
(b) Explain total and faecal coliforms. Discuss their effect on water.
13. (a) Write notes on reverse osmosis.  
Or  
(b) Discuss disinfection process of water purification.
14. (a) Write short notes on activated sludge process.  
Or  
(b) Write a note on tertiary treatment of water.

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15. (a) Discuss the effects on stresses on the Indian rivers.

Or

(b) Write notes on drip irrigation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the following water pollutions.

(i) Industrial effluents

(ii) Detergents and pathogens.

Or

(b) Define eutrophication. Describe the effect and control of eutrophication.

17. (a) Discuss briefly BOD and COD. Explain their determinations.

Or

(b) Describe the physical water quality parameters.

18. (a) Discuss briefly the following water purification process.

(i) Sedimentation

(ii) Filtration.

Or

(b) Explain the purification of water by ion exchange process with diagram and applications.

19. (a) Write a detailed account on secondary treatment of waste water.

Or

(b) Discuss the adsorption and chemical precipitation methods involved in the treatment of waste water.

20. (a) Explain the following

(i) Rain water harvesting

(ii) Water recycling.

Or

(b) Discuss about the water prevention and control of Pollution Act 1974.