

U.G. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Third Semester

Chemistry

Non Major Elective — WATER MANAGEMENT

(For those who joined in July 2021-2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following are the primary causes of water pollution?
(a) plants (b) animals
(c) human activities (d) none of these
2. What is the main effect of thermal pollution on aquatic life?
(a) Increased water temperature
(b) Reduced oxygen level
(c) Increased nutrient levels
(d) Accumulation of toxic substance

3. Temporary hardness in water is caused by
(a) Nitrates of Ca^{2+} and Mg^{2+}
(b) Sulphate of Ca^{2+} and Mg^{2+}
(c) Nitrates of Ca^{2+} and Mg^{2+}
(d) Carbonates of Ca^{2+} and Mg^{2+}
4. The maximum permissible turbidity for drinking water based on IPTU is
(a) 0IPTU (b) 5IPTU
(c) 10IPTU (d) 100IPTU
5. Which of the following process are necessary for removing suspended solids from water?
(a) Sedimentation (b) Flocculation
(c) Coagulation (d) All of these
6. The water treatment required for water obtained from a deep tube well is
(a) Coagulation only
(b) Filtration only
(c) Disinfection only
(d) Coagulation and filtration only

7. What is the waste water called after physical and biological removal of solids?
(a) secondary treated water
(b) secondary treated waste water
(c) primary effluent
(d) primary treated water
8. Which of the following is the common indicator organism used in the evaluation of waste water?
(a) Total coliform (b) Algae
(c) E.coli (d) Fecal coliform
9. Which planet is also known as blue planet?
(a) Earth (b) Mercury
(c) Venus (d) Mars
10. The ganga action plan was introduced on
(a) 14th June 1981 (b) 14th June 1982
(c) 14th June 1986 (d) 14th June 1987

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss the following water pollutants
(i) Sewage and domestic waste
(ii) Industrial effluents.
Or
(b) Write a note on radioactive water pollutants.

12. (a) Explain the physical quality parameter in water.
Or
(b) How is COD of a water sample determined?
13. (a) Explain the purification of water by sedimentation.
Or
(b) Write notes on deionisation process.
14. (a) Write a brief note on coagulation of impurities present in water.
Or
(b) Explain the adsorption method of removing contaminants from waste water.
15. (a) Explain the importance of lakes and rivers.
Or
(b) Write notes on water recycling.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Define eutrophication. Describe the effect and control of eutrophication.
- Or
- (b) Explain the following water pollutions
- (i) Agricultural discharges
 - (ii) Pharmaceutical pollutants.
17. (a) Explain pH, acidity and alkalinity. How are they measured?
- Or
- (b) Describe the hardness of water.
18. (a) Discuss briefly the following water purification process
- (i) filtration
 - (ii) reverse osmosis.
- Or
- (b) Describe anyone method of the purification of industrial water.

Page 5 Code No. : 20474 E

19. (a) Explain the pretreatment of waste water.

Or

- (b) Describe the waste water treatment method of "trickling filters".

20. (a) Describe the stresses on the Indian lakes and rivers. Explain their effect.

Or

- (b) Discuss the "Ganga action plan".

Page 6 Code No. : 20474 E