

**C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018**

**B.Sc., CHEMISTRY
SEMESTER III
U15SCH301 – WATER TREATMENT AND ANALYSIS (SBS - I)**

Time: Three Hours

Maximum: 60 Marks

SECTION - A (10 X 1 = 10 Marks)

Answer **ALL** Questions.

1. Write any two chemical parameters of water.
2. Define aeration.
3. What is lime soda process?
4. What is meant by permanent hardness?
5. Define osmosis.
6. Which treatment method is used for the removal of heavy metals from effluent of fertilizer industry?
7. What is the permissible limit of pH according to WHO?
8. What is meant by acidity?
9. What is the chloride value of WHO for drinking water?
10. Name any one of the pathogenic bacteria.

SECTION - B (5 X 4 = 20 Marks)

Answer **ALL** Questions.

11. a) Give an account on precipitation.

(Or)

- b) Write notes on chlorination of water.

12. a) Describe the zeolite process.

(Or)

- b) How will you determine hardness of water?

13. a) Discuss the boiler feed water method of softening.

(Or)

- b) Explain the effluent treatment of water from leather industry.

14. a) Explain briefly about the sampling of water for analysis.

(Or)

- b) Write a note on alkalinity of water.

15. a) How will you analyse sulphate content in water sample?

(Or)

- b) Give an account on biological examination of water.

SECTION - C (3 X10 = 30 Marks)

Answer **ANY THREE** Questions.

16. Explain the electrochemical coagulation of water.
17. Describe the following water softening methods:
i) Clark's process ii) Ion exchange process.
18. Explain the following desalination methods:
i) Electrodialysis ii) Reverse osmosis.
19. Discuss the analysis of Fe and Mn present in water.
20. How will you determine the BOD and COD of the water sample?
