

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION MAY 2018
(Fourth Semester)**

Branch – **ENVIRONMENTAL SCIENCE**

INDUSTRIAL PROCESS AND WASTE MANAGEMENT

Time : Three Hours

Maximum : 75 Marks

Answer **ALL** questions

ALL questions carry **EQUAL** marks (5 x 15 = 75)

- 1 a i) Explain the manufacturing process of sugar from cane sugar with a flow chart. (8)
- ii) Elaborate on the characteristics of the sugar industry effluents. (7)
- OR
- b Describe the biological treatment technologies for distillery spent wash. (15)

- 2 a i) Write about the classification of dyes. (3)
- ii) Explain the physico-chemical characteristics of dyeing industry effluents. (5)
- iii) Write the importance and process description of trickling filters with a diagram. (7)
- OR
- b i) Explain the characteristics and treatment offered to paper and pulp industry. (8)
- ii) What is the final treatment offered to the treated wastewater before its disposal to land? (7)

- 3 a i) What are synthetic detergents? (2)
- ii) What are PCPs? (3)
- iii) Explain the effects of the synthetic detergents and PCPs (Personal Care Products) on the aquatic ecosystem. (10)
- OR
- b i) Explain the significance of oxygen sag curve. (5)
- ii) Mention the characteristics of tannery waste water and discuss the treatment offered to the same. (10)

- 4 a i) What are the steps involved in the manufacture of nitrogenous fertilizers? Explain with a flow chart. (8)
- ii) Discuss the characteristics of fertilizer plant and highlight the treatment techniques offered to the effluent of the same. (7)
- OR
- b i) Discuss the hazards posed by Torrey Canyon oil spill to the environment. (5)
- ii) Explain the sources and treatment methods available to treat wastewater from oil refineries. (10)

- 5 a i) Write a short note on Portland Cement. (5)
- ii) Explain the principle and working mechanism of electrostatic precipitator and bag filters. (10)
- OR
- b i) How is chromium plating done? (2)
- ii) What are the characteristics of electroplating industrial effluents? (6)
- iii) What are the treatment techniques employed to treat electroplating effluents? Explain (7)