Q.P. Code : 26302

[3 Hours] **[Marks: 80]**

N.B:
1. Question No. **1 is compulsory**.
2. **Figures** to the **right** indicate **full** marks.
3. Attempt any **three** from remaining **five** questions.
4. Assume **suitable** data wherever **required**.

1. (a) Why Industrial waste needs to be treated ? **05**
   (b) What is environmental impact assessment. How is it useful ? **05**
   (c) Explain the inplant control measures to reduce volume of the industrial waste water. **05**
   (d) What is by product recovery ? Explain with suitable example. **05**

2. (a) Explain with neat flow sheet manufacturing process of sugar from sugar industry. Write down the characteristics of the effluent. **10**
   (b) Explain the effects of industrial pollutants on river/stream. **10**

3. (a) Why equalization is required in industrial waste treatment ? How to achieve it ? **05**
   (b) Explain good house keeping. **05**
   (c) Explain with neat sketch treatment given to electroplating industry effluent. **10**

4. (a) What is neutralization ? Is it necessary for industrial waste treatment ? Justify your answer. What are the methods of neutralization ? **10**
   (b) Write down the characteristics of tannery effluent. Explain with neat sketch treatment given to the effluent. **10**

5. Write short note on (any 4) **20**
   (a) Sampling of an Industrial waste
   (b) Treatability study
   (c) Effluent standards and stream standards
   (d) UASB
   (e) Dewatering of sludge

6. (a) Write down the streeter phelps equation. Explain the significance of oxygen sag curve with neat sketch. **05**
   (b) What is Save all ? **05**
   (c) Discuss with the flow sheet treatment given to the pulp and paper industry effluent. **10**
