

[This question paper contains 3 printed pages.]

Your Roll No.

5137

B

B.Sc. (Prog.)/II

IC-201 : Industrial Chemicals and Environment

(Admissions of 2005 and onwards)

Time : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt Six questions in all, including
Question No. 1 which is compulsory.

1. (a) What are the various sources of CO ? 3
- (b) Why is gypsum required in the manufacture of cement ? 3
- (c) What is 5-day BOD ? What is its unit ? 3
- (d) What are the various methods for producing colour in glass ? 3
- (e) Describe the causes of 'ozone hole'. 3
2. (a) Explain the air pollution caused by NO_x and SO_x . Suggest suitable methods to control the air pollution caused by these. 6
- (b) What are the various steps suggested for restricting the emission of green house gases ? 3
- (c) Write a short note on Industrial and photochemical smog. 3

[P. T. O.]

3. (a) Differentiate between : 3+3
- (i) Calcination and Roasting
 - (ii) Superconducting and Semiconducting oxides.
- (b) Write short notes on (any two) : 3+3
- (i) Electrolytic Refining.
 - (ii) Difference between silicates and non-silicate glasses.
 - (iii) Applications of high technology ceramics.
4. (a) Describe the "Activated sludge process". What are its advantages? 6
- (b) What do you mean by aerobic and anaerobic decomposition of sewage ? 3
- (c) COD has been found to be more scientific than BOD. Comment. 3
5. (a) How is caustic soda manufactured by Nelson's method ? 8
- (b) What are the important uses of NaOH ? 2
- (c) What are the important applications of Hydrogen gas ? 2
6. (a) What are the main ingredients required in the manufacture of cement ? 3
- (b) Describe the process for the manufacture of cement. Also give the chemical changes taking place. 6
- (c) Write short note on glazing. 3

7. (a) How is HNO_3 manufactured by Ostwald's process ? 8
- (b) Give the method for the production of potash alum. 4
8. (a) Why is annealing important in glass industry and how is it carried out ? 3
- (b) What are photosensitive glasses ? What are their uses ? 3
- (c) Classify the ceramic products on the basis of degree of vitrification. 4
- (d) What makes the glass having yellow and blue colours? 2