This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **79**

Unique Paper Code : **217363** **G**

Name of the Paper : **ICPT-303-Industrial Chemistry-III**

Name of the Course : **B.Sc. (Prog.) Applied Physical Sciences (Industrial Chemistry) Part-II**

Semester : **III**

Duration : **3 Hours** Maximum Marks : **75**

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

Attempt *six* questions in all.

Question No. **1** is compulsory.

1. Attempt any *five* questions : 5×3

   (*a*) Differentiate beween homogeneous and heterogeneous catalyst.

   (*b*) What should be the criteria of selecting a battery ?

   (*c*) How carbon content changes the properties of steel ?

   (*d*) What are superconducting and semiconducting oxides ?

   (*e*) What is the purpose of making alloys ? Explain.

   (*f*) What do you understand by sensitivity of an explosive ? How can it be determined ?

2. (*a*) Discuss the importance of annealing in the manufacturing of glass.

P.T.O.

(*b*) Describe properties and uses of silicate glass. Why are borosilicate glasses preferred in chemical laboratories ?

(*c*) Why is glazing done for ceramic articles and how is it carried out ? 4×3

3. (*a*) What is battery ? Differentiate between a primary and secondary battery.

(*b*) What is Portland cement ? Briefly describe the setting and hardening of Portland cement.

(*c*) What are zeolites ? Give examples. Why natural zeolites cannot be used for commercial applications ? 4×3

4. (*a*) Name the first real explosive. Who has discovered it and when ? Write its decomposition.

(*b*) What are the various properties of steel that can be improved by adding nickel and cobalt in steel ?

(*c*) What are the various properties of a good catalyst ? How can a catalyst be deactivated ? 4×3

5. (*a*) Differentiate between Ferrous and Non-Ferrous alloys. Give examples.

(*b*) What are Ceramics ? Write different uses of ceramic products.

(*c*) What are the drawbacks of ammonium nitrate fertilizer ? Outline the safety measures to be followed during its storage and packing. 4×3

6. (*a*) What do you understand by phase transfer catalysis ? Explain with examples.

(*b*) Differentiate between physical and chemical adsorption.

(*c*) Explain the working of lead acid battery including the reactions involved. 4×3

7. (*a*) Write different constituents of paint.

(*b*) How are explosives classified on the basis of their applications and structures ?

(*c*) Explain the manufature of PETN. 4×3

8. Write short notes on any *three* of the following : 4×3

(*a*) Sodalime glass

(*b*) RDX

(*c*) Eco-friendly paint

(*d*) Mixed fertilizer.