



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 5th Semester Examination, 2020

DSE2-CHEMISTRY

INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

Answer any four questions from the following

10×4 = 40

1. (a) Write the chemical properties of glass. 2
(b) State the roles of PbO and Feldspar in the manufacture of glass. 2+2
(c) Write the composition and properties of safety glass and photosensitive glass. 2+2
2. (a) What is Portland cement? Write the composition of Portland cement. 1+2
(b) What is meant by setting of cement? Give the reactions involved therein. 2+3
(c) What is 'Quick Setting cement'? 2
3. (a) What are the main objectives of surface coating? 2
(b) Discuss thoroughly the different constituents of paints. 6
(c) What do you mean by 'Toners'? 2
4. (a) What are the various sources of organic fertilizers? 2
(b) Describe the process of manufacture of Urea with a flow chart diagram. 6
(c) What is triple superphosphate? 2
5. (a) Discuss, with examples, the catalytic steps involved in the homogeneous and heterogeneous catalysis. 4
(b) Discuss the industrial applications of one homogeneous and one heterogeneous catalyst. 2+2
(c) What is meant by deactivation of catalyst? 2
6. (a) What are primary and secondary batteries? Give examples. 3
(b) Briefly explain the working of a Lead-Acid battery. 4
(c) Write a short note on 'Fuel Cells'. 3

7. (a) Write the composition, properties and uses of the following steels: 5
(i) Alloy Steel
(ii) Tool Steel
(b) Discuss the manufacture of steel by the removal of Si, C, Mn, S and P. 5
8. Write short notes on (any *four*): $2\frac{1}{2} \times 4 = 10$
(a) Solar Cell
(b) Phase transfer catalysts
(c) Eco-friendly paints
(d) Mixed fertilizer
(e) Zeolites as catalysts.

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