

FACULTY OF SCIENCE
B.Sc. II-Semester (CBCS) Examination, May / June 2018

Subject : Chemistry

Paper – II

Time : 3 Hours

Max. Marks: 80

PART – A (5 x 4 = 20 Marks)
(Short Answer Type)

Note : Answer any FIVE of the following questions.

- 1 What are interhalogen compounds give the structure of AB_5 and AB_7 compounds?
- 2 Explain the hybridisation and structure XeF_2 and XeO_3 .
- 3 Explain the mechanism for nitration of Benzene.
- 4 What is inversion in configuration? Explain with a suitable example.
- 5 What is Vant Hoff's factor? What are its values for ideal and non-ideal solute?
- 6 Define the Law of constancy of interfacial angles.
- 7 What is super conductivity? Explain zero resistivity.
- 8 Explain the role of methyl orange as an indicator.

PART – B (4 x 15 = 60 Marks)
(Essay Answer Type)

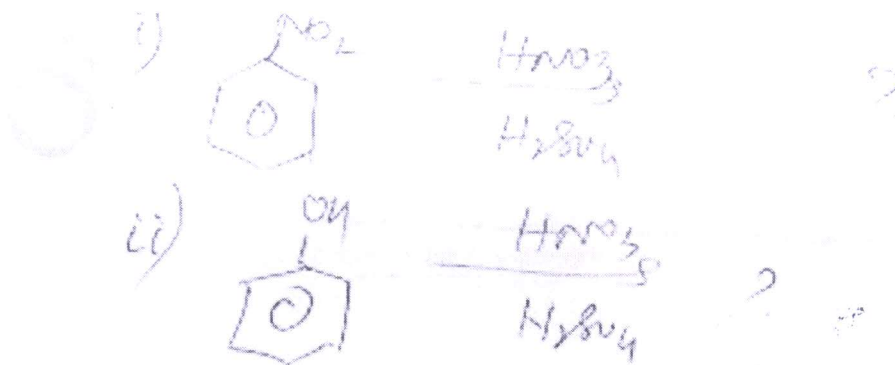
Note: Answer all the questions.

- 9 (a) What are polyhalides? Discuss the geometry of
 (i) ICl_2^- (ii) ICl_4^- and (iii) I_3^-

OR

- (b) Give a comparative study of II and III Transition series with their 3d analogues.

- 10 (a) Give the major product for the following reactions and justify with mechanism.



OR

- (b) Explain the stereochemistry of S_N^2 and S_N^1 reactions by taking suitable alkyl halides as an example.

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- 11 (a) Write a short note on :
(i) Steam distillation (ii) Minimum and maximum boiling azeotropic mixtures

OR

- (b) (i) Explain the relationship between osmotic pressure and molecular weight of solute.
(ii) 20 gms of a non-volatile non-electrolytic solute is dissolved in 300ml of water. It shows the osmotic pressure of 8.2 atmospheres at 0°C. Find molecular weight of solute.

- 12 (a) Explain the principle involved in Gravimetric analysis. Mention the steps involved in Gravimetric analysis.

OR

- (b) (i) Explain what is Meissner effect.
(ii) Describe briefly Fiber reinforced composites.
