Code No. 7032/E

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.

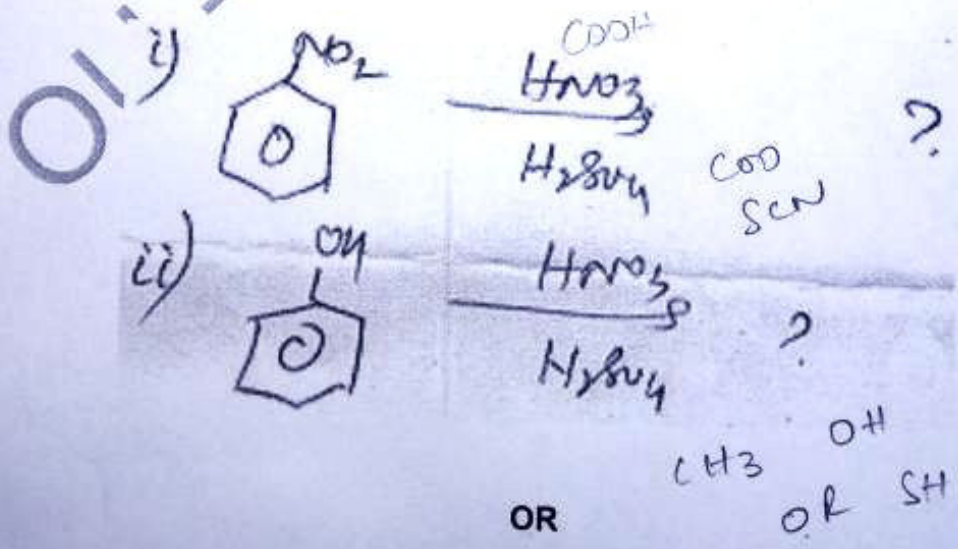
PART – B (4 x 15 = 60 Marks)
(Essay Answer Type)
Note: Answer all the questions.

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

OR

(b) Give a comparitive 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.

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^{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.

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