11222

B.Sc. II Semester Degree Examination, May - 2018

CHEMISTRY

Paper - II

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates:

1) Question paper has **four** sections. All sections are **compulsory**.

2) Answer for **all** sections should be written in the same answer book.

Section - A

(Inorganic, Organic and Physical)

1. Answer any **Ten** of the following: **(10×2=20)**

a) Write the electronic cofiguration of Na and Rb.

b) Define ionisation energy.

c) Why salts of magnesium and Berylium do not give any colour on the bunsen flame.

d) Graphite is good conductor. Give reason.

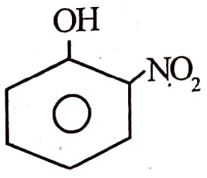
e) What are Pseudohalogens?

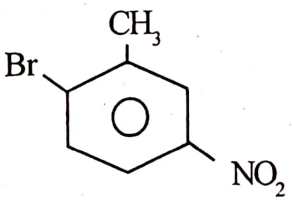
f) What are cycloalkanes? Give example.

g) Calculate the angle strain in cyclopropane.

h) What are deactivating substituents? Give example.

i) Write the IUPAC names of

i) 

ii) 

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27222(New)

B.Sc. II Semester Degree Examination, April/May - 2019

CHEMISTRY

Chemistry-II

PAPER - II

(New)

Time : 3 Hours

Maximum Marks : 60

Instructions to Candidates:

1. Part A: **All** are compulsory
2. Part B: Solve any **five** questions from seven questions

PART-A

(10×1=10)

1. Answer the following Questions

a) Alkali metals are softer than alkaline earth metals. Why?

b) Give the structure of diborane.

c) Graphite is a good conductor give reasons.

d) What is activating effect? Give one example.

e) What are the criteria for aromaticity?

f) How is nitrobenzene prepared from benzene?

g) Define Nernst distribution law.

h) What is critical solution temperature?

i) What are freezing mixture?

j) What is phase rule?

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PART-B

Answer any **Five** of the following Questions (5×10=50)

2. a) Discuss the properties such as oxides, peroxides and hydroxides of alkali metals. (6)

   b) Explain the electronic configuration and ionization energy of alkaline earth metals. (4)

3. a) Explain the following properties of carbon family such as electronic configuration, ionization energy and electron affinity. (6)

   b) Give the diagonal relationship between boron and silicon. (4)

4. a) Explain the mechanism of halogenation of benzene. (6)

   b) Write a brief note on structure of benzene. (4)

5. a) Explain the reduction of nitrobenzene in acid, alkali and neutral medium. (6)

   b) Explain the different electrophilic substitution of nitrobenzene. (4)

6. a) Derive an expression for Nernst distribution law when solute molecules undergo association. (6)

   b) Explain the application of Nernst distribution law to solvent extraction. (4)

7. a) State and explain Raoults law of vapour pressure. (6)

   b) Write a note on different types of binary mixtures of completely miscible liquids. (4)

8. a) Discuss the application of phase rule to KI-H_2O system. (6)

   b) Give the application of phase rule to water system. (4)

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27222(New)

B.Sc. II Semester Degree Examination, September - 2020

CHEMISTRY

PAPER - II

(New)

Time : 3 Hours | Maximum Marks : 60

Instructions to Candidates : 1. Part A : All are Compulsory

2. Part B : Solve any five questions from Seven questions.

PART - A

1. Answer ALL the following questions. (10×1=10)

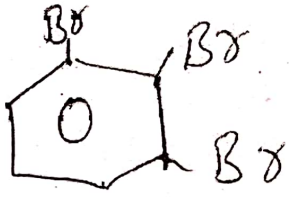
a) What are S-block elements?

b) Write the electronic configuration of Na.

c) What are Pseudohalogens?

d) What is Huckel's rule?

e) Write the IUPAC name of



f) Write the reduction of nitrobenzene in acid medium.

g) State Nernst's distribution law.

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h) What is azeotropic mixture?

i) What is critical solution temperature?

j) Define Phase rule.

PART - B

Answer any FIVE of the following questions. (5×10=50)

2. a) Describe the comparative study of properties of compounds of alkaline earth metals such as oxides & hydroxides. (4)

b) Explain the comparative properties of carbonates and bicarbonates of alkali metals. (6)

3. a) Describe the structure of diamond. (4)

b) Describe the properties of Boron family such as electronic configuration, Ionisation energy & Electron Affinity. (6)

4. a) Write the mechanism of nitration of benzene. (4)

b) Explain the orienting influence of -OH group in Phenol. (6)

5. a) Write the reduction of nitrobenzene in alkali and neutral medium. (4)

b) Write three methods for the preparation of nitrobenzene. (6)

6. a) Solid X is added to a mixture of benzene and water. After shaking well and allowing to stand, 10ml of benzene layer was found to contain 0.13 g of X and 100 ml of water layer contained 0.22 g of X. Calculate the value of distribution coefficient. (4)

b) Derive Nernst's distribution law. (6)

7. a) Explain the variation of vapour pressure & boiling point of completely miscible liquid pairs with composition. **(4)**

b) Describe Phenol-water system. **(6)**

8. a) Explain Freezing mixture. **(4)**

b) Describe the application of phase rule to sulphur system. **(6)**

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NEP

B.Sc. II Semester Degree Examination, September/October 2022
CHEMISTRY (New)
DSC – 2 : Inorganic and Physical Chemistry – I

Time : 3 Hours

Max. Marks : 60

Instructions : 1) Part – ***A*** : ***All*** *questions are* ***compulsory***.
2) Part – ***B*** : *Answer* ***any five full*** *questions.*

PART – A

1. Answer the following questions. **(10×1=10)**
   a) State Aufbau's principle.
   b) State Pauli's exclusion principle.
   c) Write the electronic configuration of Copper (Cu) and Zinc (Zn).
   d) What are S-block elements ?
   e) Define atomic radii.
   f) Define root mean square velocities.
   g) Define Collision frequency.
   h) Define parachor.
   i) What is unit cell ?
   j) State Nernst distribution law.

PART – B

Answer **any five full** questions. **(5×10=50)**

2. a) Write Schrodinger wave equation for hydrogen atoms. What are the various parameters used in the equation ? **4**
   b) What do you understand by radial and angular wave function ? How will you represent the complete wave functions in terms of radial and angular wave function ? **6**

3. a) Explain hydrides of P-block element. **4**
   b) Explain the determination of ionic radii. **6**

4. a) What is the significance of Ψ and Ψ^2 ? **4**
   b) Explain Allred-Rochow scale of electronegativity. **6**

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5. a) Describe continuity of State.
   b) Derive the expression for law of corresponding of States.

6. a) Explain the determination of surface tension of liquid by using stalagmometer.
   b) Explain the following statement.
      i) Effect of temperature on viscosity.
      ii) Effect of temperature on surface tension.

7. a) Explain in detail the structure of Nematic and chlorestic phases.
   b) Explain the law of rational indices.

8. a) Explain the atomic spectrum of hydrogen by Bohr's theory.
   b) Explain an experiment for determination of viscosity of a liquid by usin Ostwald's viscometer.
