

B.B.M. COLLEGE BALIAPUR

DHANBAD

Internal Exam – 2022

SEMESTER – IV

Class – B.Sc. (Hons) Time – 1hr

Sub. – Chemistry (Core-8) F.M. – 15

Inorganic Chemistry

Answer any two of the following question-

1. (a) Write the IUPAC rules of the nomenclature of coordination compounds.

(b) Write the IUPAC name of the following coordination compounds.

(i) $K_4[Fe(CN)_6]$ (ii) $[Ni(CO)_4]$

(iii) $[Cr(en)_3]Cl_3$ (iv) $CoCl(NH_3)$

2. (a) What are transition elements?

(b) Write down the general characteristics of 3d-series element.

(c) Write the electronic configuration of Cu and Cr.

3. Write notes on :-

(a) Na/K-pump (b) Toxicity of metal ions

(c) octahedral complex of coordination compounds.

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Class – B.Sc. (Hons) Time – 1hr

Sub. – Chemistry (Core-9) F.M. – 15

Answer any two of the following questions-

Organic Chemistry

1.(a) Describe Gabriel phthalimide synthesis.

(b) How will you prepare ethylamine and benzyl amine?

2. Write notes on –

(a) Carbylamine reactions.

(b) Mannich reaction.

(c) Hofmann- elimination.

3. How is benzene diazonium in the laboratory?

4. Describe with mechanism wherever applicable, chemical properties of benzene diazonium chloride.

PRactical

Answer any one of the following.

1. Detection of extra element from unknown given substance.

2. Determine function group test for NO_2 , NH_3 and alcohol.

(i) Estimate of Nickel (ii) using DMG

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Sub. – Chemistry (Core- 10) F.M. – 15

Physical Chemistry

Answer any two of the following questions

1. (a) What do you mean by transport number. How do you determine transport number by Hittorf's Method?

(b) Factor affecting transport number.

2. (a) What do you mean by ionic conductance and ionic mobility. What is the relation between them?

(b) The molar ionic conductance at infinite dilution of Ag^+ ion is $61.92 \times 10^{-4} \text{ sm}^2 \text{ mol}^{-1}$ at $25^\circ C$. Calculate the ionic mobility of Ag^+ ion at $25^\circ C$ infinite dilution.

3. (a) Answer Explain Kohlrausch's law of independent migration of ions.

(b) Discuss its application in the determination of solubility of a sparingly soluble salt and molar conductance at infinite dilution of a weak electrolyte.

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Class – B.Sc. (GE/GEN) Time – 1hr

Sub. – Chemistry F.M. – 15

Answer any two of the following question

1. Write notes on Diborane.
2. (a) Write main postulates of kinetic theory of gases.
(b) Difference between rate of reaction & molecularity.
3. Write notes on effect in crystals.

Sub-chemistry-G.E Practical

Answer any one of the following question.

1. Determine of the surface tension of a liquid or a dilute solution using a stalagmometer.