

GOVERNMENT COLLEGE (A), RAJAHMUNDRY
I B.Sc. CHEMISTRY HonS. (SEMESTER-II)
MODEL PAPER
Course - 3: INORGANIC CHEMISTRY

Time: 2½ Hrs.

Maximum Marks: 50

PART- A

Answer **ALL** the questions. Each question carries **SEVEN** marks. **5 x 7M = 35 M**

1. Explain the preparation and structure of Diborane. [BT2,CO1]

(OR)

2. What are Silicones? Explain the classification, preparation and applications of Silicones. [BT3,CO1]

3. What are Oxides? Explain the classification of Oxides based on Oxygen content.

[BT2,CO2]

(OR)

4. Explain the preparation and structures of AX₃ and AX₅ type Inter halogen compounds.

[BT2,CO2]

5. Why d- block elements exhibit variable oxidation states? Explain the variable oxidation states exhibited by d- block elements. [BT4,CO3]

(OR)

6. Explain the following characteristic properties of d-block elements. [BT2,CO3]

(a) Complex forming ability

(b) Magnetic properties.

7. What is Lanthanide contraction ? Explain the consequences of Lanthanide contraction. [BT2,CO3]

(OR)

8. How can you separate the Lanthanides by ion exchange method? [BT4,CO3]

9. What are Grignard reagents? Write the preparation and synthetic applications of Grignard reagents. [BT3,CO4]

(OR)

10. What are Organometallic compounds? Explain the classification of Organometallic compounds based on Carbon-Metal (C-M) bond. [BT3,CO4]

PART- B

Answer any **FIVE** of the following questions. Each question carries **THREE** marks

5 x 3M = 15M

11. Why Borazole is called as Inorganic Benzene? Explain in detail. [BT4,CO1]

12. Illustrate the structure of P₃N₃Cl₆. [BT2,CO1]

13. Write a short note on pseudo halogens. [BT1,CO2]

14. Describe the classification of oxides based on chemical behavior. [BT2,CO2]

15. Why Cr and Cu exhibit abnormal electronic configurations? [BT4,CO3]

16. Why particularly d- block elements act as catalysts? Explain with suitable examples. [BT4,CO3]

17. Write the differences between Lanthanides and Actinides. [BT1,CO3]

18. Describe the classification of organometallic compounds. [BT2,CO4]

GOVERNMENT COLLEGE (A), RAJAHMUNDRY I B.Sc.
ANALYTICAL CHEMISTRY
SEMESTER-II MODEL
PAPER (From 2024-25)
Course - 4: BASIC PRINCIPLES IN ANALYTICAL CHEMISTRY

Time: 2¹/₂ hrs.

Maximum Marks: 50

PART- A

Answer ALL the questions. Each carries SEVEN marks

5 x 7 = 35 M

1. What are Primary standard solutions? Explain the experimental procedure for the preparation of a primary standard solution. BT2 CO1 PO1

(OR)

2. What are secondary standard solutions? Explain the experimental procedure for the preparation of a secondary standard solution. BT2 CO1 PO1

3. Explain the methods of detecting analytes based on Electric charge and electromagnetic radiation BT2 CO2 PO2

(OR)

4. Explain about the Instrumental methods of analysis with suitable examples BT1 CO2 PO2

5. Explain in detail about pH meter BT2 CO3 PO3

(OR)

6. Write in detail about the single pan analytical balance BT2 CO3 PO3

8. What are Errors? Write about the classification of errors BT1 CO4 PO4

(OR)

9. What are significant figures? Write the computation rules of significant figures BT3 CO4 PO4

10. Explain different theories of Indicators BT2 CO5 PO5

(OR)

11. Explain the acid – base titrations with examples BT3 CO5 PO5

PART- B

Answer any FIVE of the following questions. Each carries THREE marks 5 x 3 = 15 M

11. Define mole and molar concentration BT1 CO1 PO1
12. Write briefly about chemical analysis BT2 CO2 PO2
13. Write a short note on Qualitative analysis BT2 CO2 PO2
14. How do you calibrate a volumetric flask? BT3 CO3 PO3
15. Write the uses of commonly used laboratory glass apparatus BT1 CO3 PO3
16. Define mean and standard deviation BT3 CO4 PO4
17. Explain briefly about accuracy BT2 CO4 PO5
18. What are Buffer solutions? BT1 CO5 PO5