

Burdwan Raj College
Department of Chemistry
UG Part II Examination 2020

Internal Assessment: Home Assignment

(To be Submitted to designated email id mentioned below by 16th November 2020)

Subject: Chemistry Pass

Paper: II

Send your assignments to (email id): brcchemistry81@gmail.com

Full Marks: 50

Time: 3 h

Group A (Inorganic Chemistry)

1. Answer *any five* from the following questions: (5X5 = 25)
- (a) Write down Werner's theory for coordination complexes. What is chelate effect?
(3+2)
 - (b) Discuss the structure and bonding of B₂H₆ and BF₃. Compare their Lewis acidity.
(2+2+1)
 - (c) How borazine can be prepared? Discuss its structure. Why it is called 'inorganic benzene'?
(2+2+1)
 - (d) Write short notes on (I) galvanization and (II) tin plating.
(2.5+2.5)
 - (e) Compare the acid strengths between H₃PO₂, H₃PO₃ and H₃PO₄ with explanation. What is the composition of 'plaster of paris'?
(3+2)
 - (f) Discuss the principles of isolation of Ni. Give some uses of this metal.
(4+1)

Group B (Physical Chemistry)

2. Answer *any five* from the following questions: (5X5 = 25)
- (a) What is Boyle temperature? Derive an expression for Boyle temperature of van der Waals' gas using Virial equation of state.
(1+4)
 - (b) Show that the magnitude of reversible work in an isothermal expansion of ideal gas is always higher in value than that of irreversible work.
 - (c) Derive Van't Hoff isotherm.
 - (d) Obtain an expression for Michalis-Menten constant for enzyme catalyzed rate equation.
 - (e) Define specific and molar conductance. How do they vary with dilution for both strong and weak electrolyte - explain?
(2+3)
 - (f) Write down Lambert-Beer's law. What is quantum yield? Give three main differences between fluorescence and phosphorescence processes.
(1+1+3)
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Procedure of Appearing in the Internal Examination:

- 1. Download the question paper from the “online examination update” section of the College portal: www.burdwanrajcollege.ac.in**
- 2. Write your assignment on blank white A4 size papers.**
- 3. The assignment must carry the following details of the student:**
 - a. Name of the Student
 - b. University Roll Number
 - c. University Registration Number
 - d. Name of the Paper
 - e. Mobile Number of the Student
- 4. Examinees will have to submit their own hand-written answer scripts to the mail id specified above in a single pdf file.**
- 5. On the subject-line of the mail write your Name and University Roll No.**