

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)

CLASS: IMSC/MSc  
BRANCH: CHEMISTRY

SEMESTER : IX/I  
SESSION : MO/2024

SUBJECT: CH505 BIOINORGANIC CHEMISTRY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|---|-----|-----|----|
| Q.1(a) | Discuss the role of Cu in the biological system.  | [5] | O3  | BL |
| Q.1(b) | Explain the Na <sup>+</sup> /K <sup>+</sup> pump.   | [5] | CO1 | 1  |
| Q.2(a) | Describe the function of Cytochrome P- 450.   | [5] | CO1 | 2  |
| Q.2(b) | Discuss the structure, function and mechanism of non-heme respiratory pigment.              | [5] | CO2 | 1  |
| Q.3(a) | Describe the structure, function and catalytic cycle of Catechol oxidase.                   | [5] | CO2 | 1  |
| Q.3(b) | What is Nickel-urease? Discuss its biological importance, structure and mechanism involved. | [5] | CO3 | 1  |
| Q.4(a) | Draw the structure of Vit-B12. Discuss about the cyanocobalamin                             | [5] | CO3 | 2  |
| Q.4(b) | Name and draw the three types of Hydrogenase. What are the application of Hydrogenase.      | [5] | CO4 | 3  |
| Q.5(a) | Explain chelation therapy. Discuss the role of gold and platinum in cancer therapy.         | [5] | CO4 | 1  |
| Q.5(b) | Discuss the role of heavy metals and their toxicity mechanism in human.(any two)            | [5] | CO5 | 2  |
|        |   |     | CO5 | 3  |

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