

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

CLASS: M.Sc  
BRANCH: Chemistry

SEMESTER: IV  
SESSION: SP-22

SUBJECT: CH 513- Inorganic Photochemistry

TIME: 2 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.

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1. a) What is Inter System Crossing? Discuss about the phosphorescence [5]  
b) Discuss the Solvent effect on  $\pi \rightarrow \pi^*$  transitions and  $n \rightarrow \pi^*$  transitions. [5]
  2. a) Discuss about the Water-oxidizing catalysts. [5]  
b) What is Photosensitizers? [5]
  3. a) Discuss the function of Dye-sensitized solar cells. [5]  
b) Explain Artificial photosynthesis. [5]
  4. a) Discuss the types of porphyrin with structure. [5]  
b) Give the mechanism of biosynthesis of porphyrin. [5]
  5. a) Give the route of biosynthesis of chlorophyll from uroporphyrinogen III and discuss its structure. [5]  
b) Discuss the structure of Vitamin B12. What are the sources of vitamin B12 [5]

25/04/2022 E