

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

CLASS: IMSC  
BRANCH: CHEMISTRY

SEMESTER : III  
SESSION : MO/19

SUBJECT: CH201 INORGANIC CHEMISTRY - II

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) How do metals occur in nature? Describe the general procedure of extracting a metal from its ores. [5]  
Q.1(b) Write short notes on : (i) hydro metallurgy, (ii) electro refining [5]
- Q.2(a) How are acids and bases defined in terms of (i) Arrhenius concept, (ii) Bronsted -Lowry concept. Give their advantage and limitations. [5]  
Q.2(b) Discuss the effect of polarity and dielectric constant on relative strength of acids and bases. What are the characteristics of a hard acid, soft acid, hard base and a soft base? [5]
- Q.3(a) Explain complex formation tendency in concern of S-block element. Give the structure of complexes of Mg, Ca, and Be. [5]  
Q.3(b) Explain the anomalous behaviour of carbon citing suitable examples. Give a detailed description of oxoacids of P. Give their important characteristics and structures. [5]
- Q.4(a) What prompted Bartlett to conjecture that it is possible to prepare the fluorides of Xe? Give the general properties and uses of the noble gas. [5]  
Q.4(b) Give methods of preparation, properties and structure of the following: [5]  
(i)  $\text{XeF}_4$  (ii)  $\text{XeOF}_4$
- Q.5(a) What are phosphazenes? How are they prepared? Discuss the structure of chlorophosphazene. [5]  
Q.5(b) Discuss the various classification of silicates with examples and structure. [5]

::::04/12/2019::::M