

Roll No.

21201

B. Sc. (Pass Course) 2nd Sem.

Examination – May, 2019

CHEMISTRY - I (INORGANIC CHEMISTRY)

Paper : CII-201

Time : Three hours / [Maximum Marks : 30

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any **five** questions in all, selecting **one** question from each Unit. Question No. **1** is **compulsory**. All questions carry equal marks.

1. **Compulsory question :** $1 \times 6 = 6$

- Explain why p-nitro phenol has higher boiling point than o-nitro phenol ?
- How p- and n-type semiconductors are prepared ?
- Why KOH is a stronger base than $\text{Ba}(\text{OH})_2$?
- Xe is known to form some compounds but not He and Ar ? Explain.

P. T. O.

- (e) Draw the structure of diborane.
- (f) Sketch the structure of white, red and black phosphorus.

UNIT - I

2. (a) What are Vander Waal's forces ? How are they helpful in explaining the properties of noble gases ?
- (b) Explain briefly the band theory of metals. $3 \times 2 = 6$
3. (a) What kind of forces must be overcome to boil water ? Explain.
- (b) Give the role of semiconductor in photovoltaic cell. $3 \times 2 = 6$

UNIT - II

4. (a) Draw the structure of chlorophyll and explain its function in biosystem.
- (b) Discuss the factors which led to late discovery of noble gas. $3 \times 2 = 6$
5. (a) Discuss the diagonal relationship between Li and Mg.
- (b) XeF_6 is a distorted molecule. Why ? $3 \times 2 = 6$

(2)

UNIT - III

6. (a) (i) Oxygen atom in H_2O has two lone pair electrons whereas NH_3 has one unshared pair but still NH_3 is a stronger base. Explain.
- (ii) What happens when diborane burnt in oxygen ?
- (b) What is the back bonding ? Why does it occur in BX_3 and not in AlX_3 . $3 \times 2 = 6$
7. (a) Discuss the applications and properties of fluorocarbons.
- (b) Why the melting point of SiO_2 is higher than CO_2 . $3 \times 2 = 6$

UNIT - IV

8. (a) Which group-15 elements- (i) cannot form pentahalide (ii) show maximum catenation ?
- (b) Discuss the structure of H_2O_2 . How does it behave as bleaching agent ? $3 \times 2 = 6$
9. (a) What are interhalogen compounds ? Why are they more reactive than halogens ?
- (b) Write down the name of oxides of phosphorus. $3 \times 2 = 6$

(3)