# UNIVERSITY OF THE PUNJAB

**Seventh Semester – 2019**

**Examination: B.S. 4 Years Program**

Roll No. in Fig. .....

Roll No. in Words. .....

.....

.....

Signature of Supdt.:

**PAPER: Inorganic Chemistry (Sp. Theory-II)** **MAX. TIME: 15 Min.**

**Course Code: CHEM-407 Part–I (Compulsory)** **MAX. MARKS: 10**

**Attempt this Paper on this Question Sheet only.**
**Please encircle the correct option. Division of marks is given in front of each question.**
**This Paper will be collected back after expiry of time limit mentioned above.**

**Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)**

(i) $BF_3$ dissolves in $NH_3$ due to:
a) Ion-dipole interactions b) dipole forces c) hydrogen bonding d) co-ordinate bonding

(ii) Mixing of $Ba(NO_3)_2$ and AgCl will give precipitates of _____ in liq. $NH_3$.
a) AgCl b) $BaCl_2$ c) $AgNO_3$ d) $Ba(NO_3)_2$

(iii) High temperature superconductors are:
a) $YBa_2Cr_3O_7$ b) $CaTiO_3$ c) $MgAl_2O_4$ d) all of these

(iv) Dielectric constant of $NH_3$ is:
a) 78.5 b) 22.0 c) 17.3 d) 83.6

(v) The element used for dating in ancient remains is:
a) C-14 b) Ni c) C-12 d) N

(vi) Which is not a parent nuclide?
a) Uranium-238 b) lead-206 c) uranium-235 d) thorium-232

(vii) What is the half-life of an isotope if 125g of a 500g sample of the isotope remains after 3 years?
a) 1.5 years b) 2.5 years c) 3.5 years d) 4.5 years

(viii) Which of the following has greatest penetrating power?
a) Alpha particles b) beta particles c) gamma rays d) all show same power

(ix) Pick out the oxide which is not acidic:
a) $SiO_2$ b) $P_4O_{10}$ c) $SO_2$ d) MgO

(x) Moving across the period basic character of oxides:
a) Increases b) remains same c) decreases d) become zero

# UNIVERSITY OF THE PUNJAB

**Seventh Semester – 2019**

**Examination: B.S. 4 Years Program**

Roll No. .....

**PAPER: Inorganic Chemistry (Sp. Theory-II)**
**Course Code: CHEM-407 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**
**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Give short answers to the following questions. (10x2=20)**

(i) Give examples of molten salts system that can be used at room temperature.
(ii) What is the relationship between decay constant and half life of radioactive compound.
(iii) What is rule of artificial transmutation in daily life?
(iv) Why $SO_3$ and $SiO_2$ tend to form polymers.
(v) Give advantages and disadvantages of using liquid ammonia as solvent.
(vi) What is levelling effect of solvents?
(vii) Give examples of complex formation reactions in $BrF_3$.
(viii) What do you mean by spinals? Discuss their magnetic properties.
(ix) Give applications of artificial transmutation reactions.
(x) What are environmental issues caused by oxides of nitrogen.

**Q.3. Give brief answers to the following questions. (3x10=30)**

(i) Discuss the chemistry of acid-base and complex formation reactions occurring in liquid ammonia.
(ii) What do you mean by projectile motion? How they can be accelerated?
(iii) How reactions in molten salts can be monitored?