



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – 2020

Paper: Inorganic Chemistry (Sp. Theory-I)

Course Code: CHEM-425 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

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 correct option.

(10x1=10)

- i. Non-metals can be analyzed by
(a) FES (b) AAS (c) ICP (d) Both 'b' and 'c'
- ii. AAS is a type of _____
(a) Molecular spectroscopy (b) FTIR
(c) Atomic Emission spectroscopy (d) Atomic spectroscopy
- iii. Material of cathode in hollow cathode lamp in AAS is made up of
(a) Tungsten (b) Quartz (c) Iron (d) Element to be investigated
- iv. Lattice dissociation energy of NaCl is
(a) +786KJ/mole (b) -786KJ/mole (c) -747KJ/mole (d) +747KJ/mole
- v. B_2H_6 is _____ called
(a) diborane (b) tetraborane (c) hexaborane (d) None
- vi. Born-Mayer equation is the refinement of
(a) Hess's law (b) Kapustinskii equation (c) Born-Lande equation (d) none
- vii. Linear silicone polymers of low molecular weight have freezing point in degree Celsius
(a) -10 to -50 (b) -50 to -80 (c) -80 to -100 (d) 200
- viii. Radiations of longest wavelength are
(a) cosmic rays (b) gamma-rays (c) X-rays (d) radiowaves
- (ix) Zircon is the example of
(a) pyro silicate (b) ortho silicate (c) meta silicate (d) cyclic silicate
- (x) Potassium (K) gives _____ characteristic color
(a) Red (b) Yellow (c) Violet (d) Green



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

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

- i. What is the maximum temperature of ICP torch and which gas is used inside the torch?
- ii. Draw a labelled diagram of a Hollow Cathode Lamp.
- iii. Differentiate between the role of flame in FES and AAS?
- iv. Give preparation of pentaborane?
- v. What are cyclic silicones?
- vi. What is the role of zeolites in water filtration?
- vii. Give the characteristic wavelength and color that Sodium metal produces?
- viii. Which gas mixture gives the highest flame temperature in AAS and what is the numerical value of that temperature?
- ix. Give different processes that happen in a graphite furnace.
- x. What are ultramarines?

Q.3. Answers to the following questions. (3x10=30)

(i). Write a short note on the following

(a) Silicates

(b) Applications of AAS in clinical chemistry

(ii). Briefly explain the principle, construction and working of a flame photometer.

(iii). Write a note on halogen exchange reactions.