

V. P. & R. P. T. P. Science College, V. V. Nagar

Internal Test – 2018 - '19

T. Y. B. Sc. Semester – V

Subject: Inorganic Chemistry

Subject Code: US05CCHE04



Date:-05/10/2018, Friday

Time:-10:00 A. M. To 12:00 Noon

Note: (i) All questions are to be attempted.

Total Marks:- 50

(ii) Figures to the right of each question indicate full marks.

Q:1 Give the most correct choice to the following multiple choice questions. (8)

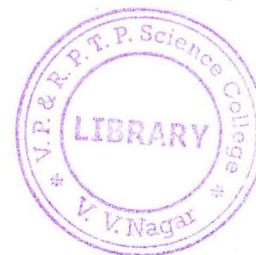
- (i) Strongest acid _____ behaves amphoteric in liquid HF solvent.
(a) H_2SO_4 (b) $HClO_4$ (c) HI (d) HNO_3
- (ii) _____ is not Brsted base but readily react with Lewis acid.
(a) H_2O (b) CN^- (c) Acetyl nitrile (d) OH^-
- (iii) Ionic carbides are regarded as derivatives of _____ and are called methanides.
(a) acetylene (b) ethylene (c) ethane (d) methane
- (iv) Exhausted permutit is reactivated by soaking with _____.
(a) aq. Na_2CO_3 (b) solid NaCl (c) 10% aq. NaCl (d) 10% aq. NaCl
- (v) Fused silica glass is also known as _____ glass.
(a) high silica (b) borosilicate (c) quartz (d) safety
- (vi) The formula of feldspar is _____.
(a) $Al_2O_3 \cdot 2SiO_2$ (b) $K_2O \cdot Al_2O_3 \cdot 6SiO_2$
(c) $K_2O \cdot Al_2O_3 \cdot 3SiO_2$ (d) $Na_2O \cdot Al_2O_3 \cdot 6SiO_2$
- (vii) Both linear and cyclic polymers obtained when _____ under goes polymerization.
(a) $RSi(OH)_3$ (b) $R_2Si(OH)_2$ (c) $R_3Si(OH)$ (d) non of above
- (viii) Whether there is complete delocalization or intensely delocalized islands of π -electrons cloud cannot be answered with certainty in case of
(a) triphospho nitrilic chloride (b) borazine (c) white graphite (d) boraxine

Q:2 Attempt any five of the following short answer type questions. (10)

- (i) Explain solvation reaction.
(ii) What are the limitations of Lewis concept of acids and bases?

- (iii) Explain the structure of allylide (C_3^{4-}) ion.
- (iv) Calculate molarity of H_2O_2 sample marked '30 volume'.
- (v) Explain annealing.
- (vi) Write important properties of glass wool.
- (vii) Give general properties of Inorganic polymers.
- (viii) Draw the structures of imides of sulphur.

- Q:3 (a) Classify the solvents in three different ways. (4)
 (b) Explain Pearson's SHAB principle. (4)



OR

- Q:3 (a) Give an account on oxidation state rule to explain acidic character of oxy acids. (4)
 (b) Describe liquid ammonia as a non aqueous solvent under following headings. (4)
 (i) Acid-base reaction (ii) Ammonation reaction

- Q:4 (a) Give the preparation and properties of aluminium carbide. (4)
 (b) Describe the water softening by Permutit process. (4)

OR

- Q:4 (a) Write note on covalent carbides. (4)
 (b) "Hydrogen peroxide is powerful oxidizing agent". Justify. (4)

- Q:5 (a) Write note on pot furnace. (4)
 (b) Explain manufacture of porcelain and china. (4)

OR

- Q:5(a) Discuss various chemical and physical changes taking place during firing in the manufacture of ceramics. (4)
 (a) Discuss at least five different raw materials used in the manufacture of glass. (4)

- Q:6(a) Discuss the structure of inorganic benzene. (4)
 (b) Describe the polymerization of different alkyl silanols. (4)

OR

- Q:6(a) Write note on borophosphate glasses. (4)
 (b) Give the preparation and properties of tetra sulphur tetra nitride. (4)
