

V. P. & R. P. T. P. SCIENCE COLLEGE, V.V. NAGAR

B. Sc. Semester-V

INTERNAL TEST: OCTOBER-2013

Friday, 4th October-2013

Time: 3.30 pm to 5.00 pm

Sub.: - Inorganic Chemistry, Course No.-US05CCHE04

Maximum Marks:30

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

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

Q : 1 Give the most correct choice to the following multiple choice questions. [6]

- (1) _____ is not conjugate base of any oxy acid of phosphorus.
 (a) H_2PO_4^- (b) HPO_4^{2-} (c) H_2PO_2^- (d) H_2PO_3^-
- (2) Point out the incorrect statement among the following.
 (a) Temporary hardness is due to bicarbonates of Ca and Mg.
 (b) Hardness of water affects soap consumption.
 (c) Permanent hardness can be removed by boiling water.
 (d) Permanent hardness is due to the soluble Cl^- and NO_3^- .
- (3) Strong acid like HNO_3 and H_2SO_4 can accept proton from _____ non aqueous solvent.
 (a) NH_3 (b) SO_2 (c) HF (d) CH_3COOH
- (4) The number and type of bonds between two carbon atoms in CaC_2 are...
 (a) one σ -bond and one π -bond (b) one σ -bond and two π -bonds
 (c) one σ -bond and half π -bond (d) only one σ -bond
- (5) The general composition of glass is _____.
 (a) Na_2SiO_3 (b) K_2SiO_3 (c) CaSiO_3 (d) $\text{Na}_2\text{O} \cdot \text{CaO} \cdot 6\text{SiO}_2$
- (6) _____ is a process of giving shapes to clay wares from clayey liquid.
 (a) Slit casting (b) Jollying (c) Kneading (d) Pressing

Q : 2 Answers the following short questions (any three).

- (1) Discuss the structure of acetylide ion (C_2^{2-}).
 (2) What is a pyrex glass?
 (3) Write the basic raw material used for making ceramics.
 (4) Explain the following acid-base reaction:



- (5) Give the merits of using liq. NH_3 as non aqueous solvent.
(6) Define: (i) Degree of hardness of water (ii) Strength of H_2O_2 solution.

Q : 3 [A] Discuss the classification of Lewis acids. [3]

[B] Discuss liq. SO_2 as a aqueous solvent under headings: [3]

- (i) Red ox reactions (ii) Metathetical reactions
(iii) Neutralization reactions

OR

Q : 3 [A] Write note on Pearson's SHAB Principle. [3]

[B] Explain the term 'Solvation reaction' and 'Solvolysis reaction' [3]
with giving suitable examples.

Q : 4 [A] Give the preparation, properties and structure of silicon carbide. [3]

[B] Justify the structure of hydrogen peroxide. [3]

OR

Q : 4 [A] Write note on metallic carbides. [3]

[B] 80.0 ml of 0.08 N KMnO_4 solutions is reduced in presence of acid by [3]
5.0 g of sample of H_2O_2 . What weight of this sample of H_2O_2 will
required to oxidize 100 ml of decinormal solution of FeSO_4 ?

Q : 5 [A] Write the important properties of high silica glass and optical glass. [3]

[B] Write a note on application of color to pottery. [3]

OR

Q : 5[A] Discuss the general properties of ceramics. [3]

[B] Explain in detail about recuperative pot furnace. [3]

