

V. P. AND R. P. T. P. SCIENCE COLLEGE  
VALLABH VIDYANAGAR  
B. Sc. INTERNAL EXAMINATION- 2013 (V<sup>th</sup> SEMESTER)  
SUBJECT : ORGANIC CHEMISTRY  
COURSE CODE : US05CCHE01

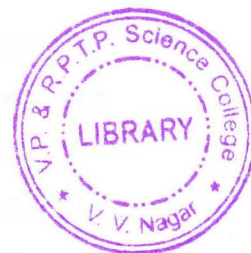
DATE : 30-09-2013  
DAY : MONDAY

TIME : 3.30 p.m. TO 5.00 p.m.  
TOTAL MARKS : 30

**Q. 1 Choose the correct option for the following**

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- (i) Nitrogen of the pyridine shows:  
(a) SP hybridization (b)  $sp^2$  hybridization (c)  $sp^3$  hybridization (d)  $sp^4$  hybridization.
- (ii) Which of the following oxidative product of picoline is known as Vitamine.  
(a) 2-methylpyridine (b) 3-methylpyridine (c) 4-methylpyridine (d) None of these.
- (iii) Which of the following is the example of isolated diene ?  
(a) 2,4-hexadiene (b) 1,2-propadiene (c) 1,4-pentadiene (d) 1,3-pentadiene.
- (iv) Which of the following is the monomeric unit of neoprene ?  
(a) Chloroprene (b) Isoprene (c) 1,3-butadiene (d) Terephalic acid.
- (v) Which of the following compound is use as diluent in detergent ?  
(a) Sodium silicate (b) CMC (c) Sodium carbonate (d) Sodium tripolyphosphate.
- (vi) Which of the following compound is bicyclic halogenated insecticide ?  
(a) BHC (b) Baygon (c) DDT (d) Heptachlor



**Q. 2 ANSWER THE FOLLOWING (ANY THREE)**

6

- (i) Explain the structure of pyridine.
- (ii) Give the preparation of furan from pentosan.

[P.T.O.]

- (iii) Natural rubber is an elastomer whereas gutta-percha is highly crystalline and non-elastic.
- (iv) What is meant by co-polymer ? Give only names of various class of co-polymer.
- (v) Give the comparison of soap and detergent.
- (vi) Give the synthesis and applications of detergent of ampholytic class.

**Q. 3 ANSWER THE FOLLOWING**

6

- (i) Nucleophilic substitution reaction in pyridine is preferred at the 2- and 4-positions.
- (ii) Give the mechanism of Skraup synthesis for quinoline.

OR

**Q. 3 ANSWER THE FOLLOWING**

6

- (i) Electrophilic substitution reaction in pyrrole is preferred at  $\alpha$ - position rather than  $\beta$ -Position.
- (ii) Give the reaction mechanism of Knorr-pyrrole synthesis.

**Q. 4 ANSWER THE FOLLOWING**

- (i) Explain the mechanism of coordination polymerization and discuss its advantages. 3
- (ii) Discuss the addition of HCl to 2,4-hexadiene. 3

OR

**Q. 4 ANSWER THE FOLLOWING**

- (i) Discuss the addition of HBr to 1,3-butadiene at  $-80^{\circ}\text{C}$  and at  $40^{\circ}\text{C}$  temperature with potential energy diagram. 3
- (ii) What is sacrificial hyperconjugation?. Why propylene is 2.7 Kcal more stable than ethylene. 3

**Q. 5 ANSWER THE FOLLOWING**

- (i) Discuss the classification of detergent on the basis of ionization into water. 3
- (ii) Give the synthesis and applications of halogenated insecticide contain chloral moiety. 3

OR

**Q. 5 ANSWER THE FOLLOWING**

- (i) Give the advantages of the organophosphorus compounds as insecticide. 3
- (ii) Give the synthesis and applications of perfume use in electroplating. 3

**THE END**

