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**D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1**

**SEMESTER EXAMINATIONS**

**NOVEMBER- 2016**

**15CPCH1A**

**ORGANIC CHEMISTRY - I**

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**Time: 3 Hrs**

**Max.Marks: 75**

**SECTION-A (5x 6 =30)**

Answer ALL the questions.

- (a) What are dissymmetric molecules? Explain the symmetry of molecules with helical structures.  
(Or)

(b) With suitable examples explain the Sawhorse, Newman and Fischer Projections.
- (a) Discuss the conformations of 1, 2 disubstituted ethane and explain its stability.  
(Or)

(b) Give the different conformations of cis and trans decalin.
- (a) What are bridgehead system? Discuss their reactions.  
(Or)

(b) What are ambident nucleophiles? Explain their reactions with aliphatic compounds.
- (a) What do you mean by diazonium coupling? Explain the mechanism operating in it?  
(Or)

(b) How will you synthesize 2 - amino 5 - methyl phenol and 1, 2, 3 trimethyl benzene?
- (a) Electrophilic substitutions are common in aromatic compounds where as they have to be activated to undergo nucleophilic substitution – Justify.  
(Or)

(b) What are benzyne intermediates? How will you generate them?

**SECTION-B (3x15 =45)**

Answer any THREE of the following questions.

- a) What do you mean by absolute configuration? How will you indicate the configuration of biphenyls and allenes? (5)

b) Explain asymmetric synthesis with suitable examples. (5)

c) Distinguish between stereo specific and stereo selective reactions with examples. (5)
- a) Draw the conformations of 1, 2 dimethyl cyclohexane and explain their stability. (7)

b) Explain the conformation and reactivity of cyclohexanol and cyclohexanone. (8)

8. a) What do you understand from  $S_N1$  mechanism? Explain with experimental evidence. (5)
- b) Explain the role of various groups as neighbors in aliphatic nucleophilic substitution reactions. (5)
- c) How will you alkylate and acylate amines and active methylene compounds? (5)
9. Discuss the following reactions. (15)
- a) Reimer – Tieman reaction
- b) Vilsmeier – Hack reaction
- c) Synthesis of Tribromo Benzene
10. Explain the following reactions.
- a) Ziegler alkylation (4)
- b) Chichibabin - reaction (4)
- c) Give the applications of kinetic and non kinetic methods of determining organic reaction mechanism. (7)

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