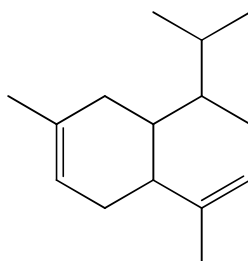


M.Sc. 3rd Semester Examination, 2018**CHEMISTRY****(Organic Chemistry)****Paper : CHEM 302C****Course ID : 31452****Time: 2 Hours****Full Marks: 40***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.***1. Answer any five:** 2×5=10

- (a) Write down the advantages of "Green chemistry".
- (b) What are the instruments used to determine the average size and crystalline nature of the nano particles?
- (c) How methoxyl group can be determined for the structure determination of an alkaloid chemistry?
- (d) Fill in the blanks:
- (i) Alkynes are _____ donor than Alkene.
- (ii) $\text{Pd}(\text{PPh}_3)_3 + \text{PhBr}$ on oxidative addition form _____.
- (e) Indicate the isoprene units of the following compound:



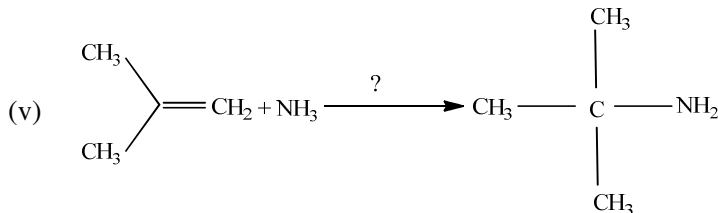
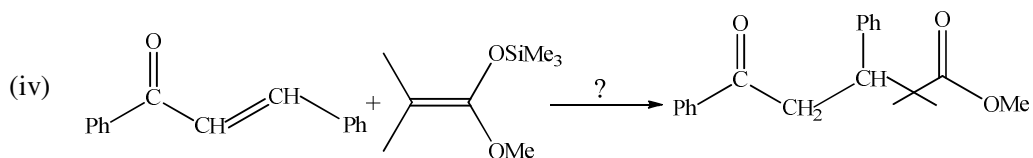
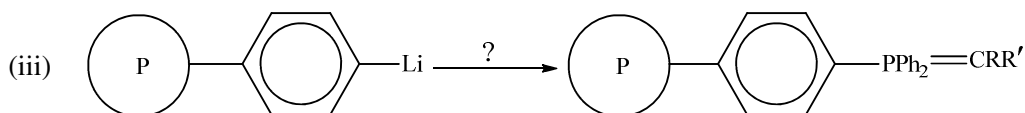
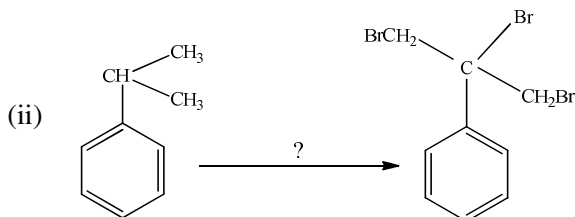
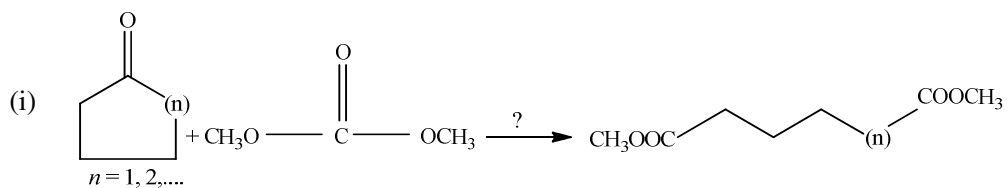
- (f) What is meant by supercritical fluid?
- (g) Give an example of non-toxic metal and metal oxide nanoparticle, respectively.

2. Answer any four: 5×4=20

- (a) State the factors that depends on the designing a green synthesis. Write two important uses of polymer nano particles. 3+2=5
- (b) What do you mean by 'sol' and 'gel'? Mention basic principles of green chemistry. 2+3=5

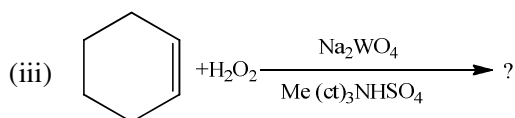
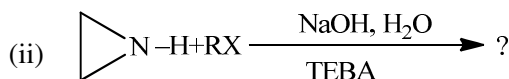
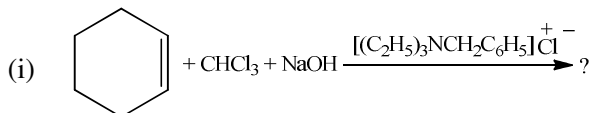
(c) Name the appropriate green synthetic reagents for the following:

1×5=5



(d) How acetyl-CoA converted into (S)- β -hydroxy- β -methylglutaryl-CoA by CO_2 and biotin during biogenesis of monoterpenes? Indicate the role of biotin. 4+1=5

(e) Write the products of the following:



(iv) Write a short note on polymer nanoparticle.

3+2=5

(3)

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(f) How will you synthesize β -myrcene taking acrolein and diethylmalonate as a starting materials? 5

3. Answer any one: 10×1=10

(a) Describe the synthesis of papaverine. How will you prepare silica nanoparticle by sol-gel process (mentioning reagents, starting materials, reaction condition and mechanism)? 5+5=10

(b) Complete the following reaction sequences: 5+2+2+1=10

