

UG Odd Semester (CBCS) Exam., December—2016

B.Sc (Honours) B.Ed

CHEMISTRY

(Honours)

(7th Semester)

Course No. : BSCH-701

(Organic Chemistry)

*Full Marks : 50**Pass Marks : 20**Time : 2 hours**The figures in the margin indicate full marks for the questions*

1. (a) Compare the energy of singlet and triplet electrons. 2
- (b) Explain phosphorescence diagrammatically. 3
- (c) Explain various electronic transitions among the bonding, antibonding and nonbonding electrons with examples. 5

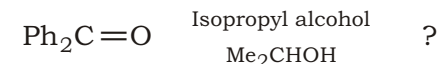
OR

2. (a) Explain photochemical elimination reaction with example. 4

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(Turn Over)

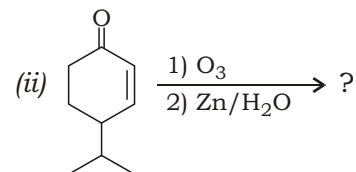
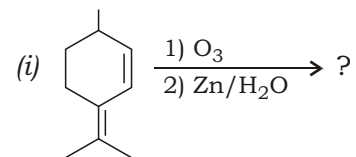
- (b) Complete the following reaction : 3



- (c) The Norrish type I process is not important for the photolysis of diaryl ketones. Suggest a reason. 3

3. (a) Write the basic carbon skeleton of isoprene. 2

- (b) Give the structural formulas for the products that you would expect from the following reactions : 4



- (c) How will you prepare coniine? 4

OR

4. Write short notes on the following : 5×2=10
- (a) Natural rubber
- (b) Condensation polymer

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(Continued)

(3)

5. (a) What will happen if glucose reacts with nitric acid? 2
- (b) Write the mechanism of mutarotation. 3
- (c) How is glucosazone stabilized? 2
- (d) Why in tetramethyl methyl glucoside only anomeric methoxy group is hydrolyzed by dilute acid? 3

OR

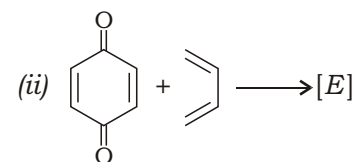
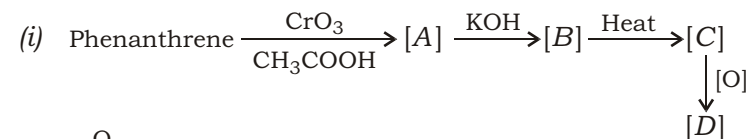
6. (a) Write the Fisher projection formula of L glucose. 2
- (b) Complete the following reactions : 3
- (i) Methyl -D-glucopyranose $\xrightarrow{\text{HIO}_4}$?
- (ii) Methyl -D-glucofuranose $\xrightarrow{\text{HIO}_4}$?
- (c) Prove that the configuration about carbon-1 (C₁) and carbon-5 (C₅) is the same in methyl -glycosides of all the aldohexoses. 3
- (d) Write the conformations of -D(+)-glucopyranose and -D(+)-glucopyranose. 2

(4)

7. (a) Write the biological importance of carotene. 5
- (b) Write the biosynthesis of vitamin A. 5

OR

8. (a) Why is Friedel-Crafts acylation but not alkylation of naphthalene practical? 2
- (b) Write the Haworth synthesis of anthracene. 3
- (c) Complete the following reactions : 1×5=5



9. (a) Write short notes on the following reactions : 3×3=9
- (i) Knoevenagel reaction
- (ii) Reformatsky reaction
- (iii) Stobbe condensation
- (b) What is acetal? 1

(5)

OR

10. (a) Write the Paal Knorr synthesis of pyrrole with mechanism. 3
- (b) How is thiophene detected in benzene? 3
- (c) Piperidine is stronger base than pyridine. Justify. 2
- (d) Electrophilic substitution of indole takes place in which position and why? 2

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