

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Ph. SEMESTER-II • EXAMINATION – SUMMER -2022

Subject Code:BP202TP**Date: 03/09/2022****Subject Name: Pharmaceutical Organic Chemistry-I****Time: 10:30am to 01:30pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) Give the structural formulae of followings-
i) 3-pentanone
ii) Dimethyl amine
iii) Chlorobutanol
iv) Salicylic acid
v) Tetrachloromethane
vi) Isopropyl alcohol | 06 |
| | (b) Give Structure and uses of cetosteryl alcohol and methyl salicylate. | 05 |
| | (c) What is free radical addition reaction? Explain the mechanism of free radical addition with an example? | 05 |
| Q.2 | (a) What are alcohols? Classify them? Outline the nomenclature, method of preparation and chemical reactions of ethyl alcohol? | 06 |
| | (b) Explain the mechanism of electrophilic addition reaction in alkenes? | 05 |
| | (c) What is hybridization? Describe the molecular orbital structure of methane? | 05 |
| Q.3 | (a) What is SN2 reaction? Explain the mechanism with a suitable example? | 06 |
| | (b) How will you differentiate E1 reaction and E2 reaction? | 05 |
| | (c) Write a note on Diel-Alder reaction? | 05 |
| Q.4 | (a) Give the reactions of carboxylic acids? | 06 |
| | (b) How will you distinguish between aldehydes and ketones? | 05 |
| | (c) Discuss the basicity of amines? | 05 |
| Q.5 | (a) What is electrophilic addition reaction? Explain the mechanism with a suitable example? | 06 |
| | (b) Explain the nucleophilic addition reactions of aldehydes and ketones? | 05 |
| | (c) Explain the mechanism of dehydrogenation of alkyl halides? | 05 |
| Q. 6 | (a) Comment the following statements-
i) Treatment of alkyl halides with aqueous alkali gives alcohol, while alcoholic alkali gives olefines.
ii) Aliphatic amines are more basic than alcohols.
iii) Alkenes undergo electrophilic addition whereas carbonyl compounds undergo nucleophilic addition. | 06 |
| | (b) Explain briefly cannizzaro reaction and perkin reaction? | 05 |

- (c) Write a short note on ozonolysis? 05
- Q.7 (a) What are the general methods of preparation of alkenes? Explain the mechanism of any one method? 06
- (b) Give the two methods of preparation and chemical reactions of benzaldehyde? 05
- (c) Write a note on antimarkownikoff's orientation? 05
