

2071

B.A./B.Sc. (General) Fourth Semester  
Chemistry

Paper – XIV: Organic Chemistry – B  
(Same for B.Sc. Microbial and Food Technology)

Time allowed: 3 Hours

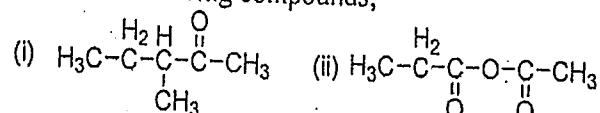
Max. Marks: 22

**NOTE:** Attempt five questions in all, including Question No. 9 (Section-E) which is compulsory and selecting one question each from Section A-D.

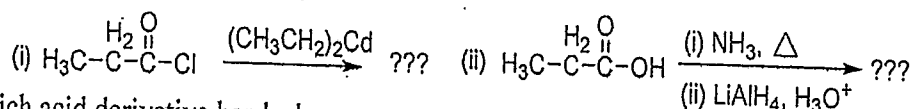
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### Section-A

1. (a) Give the IUPAC names for following compounds; (2)



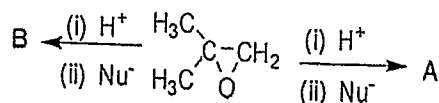
- (b) Arrange the acid derivatives in increasing order of reactivity towards nucleophilic substitution reaction and give explanation for same order. (2)
2. (a) Complete following reactions; (2)



- (b) Which acid derivative has lachrymatory nature and why? (2)

### Section-B

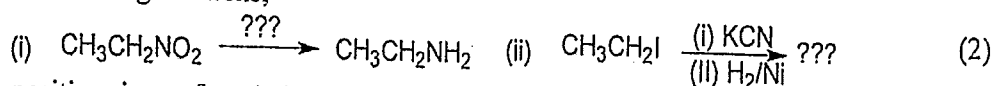
3. (a) Complete the following reactions; (2)



- (b) Write a note on synthetic detergents. (2)
4. (a) Why are 3° haloalkanes not used in Williamson ether synthesis? Explain with an example. (1)
- (b) Define the terms (i) triglycerides (ii) rancidity (iii) iodine value (3)

### Section-C

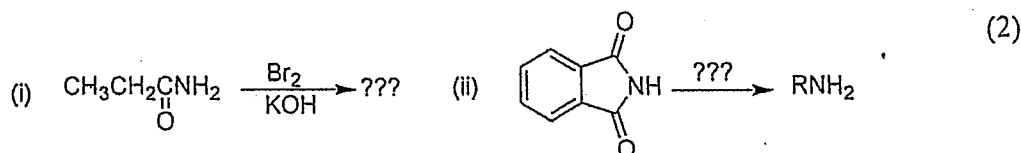
5. (a) What is the order of basicity of following amines and why?  $\text{CH}_3\text{CH}_2\text{NH}_2, (\text{CH}_3)_3\text{N}, (\text{CH}_3)_2\text{NH}$  (2)
- (b) Complete following reactions; (2)



6. (a) Which position is preferred for nucleophilic substitution reactions in nitroarenes? Explain in detail. (2)
- (b) Complete following reactions

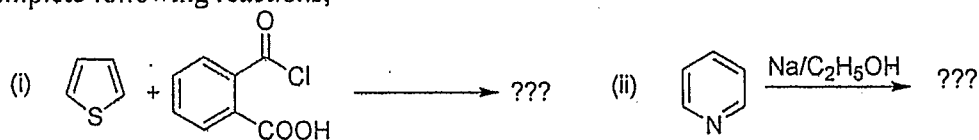
P.T.O.

(2)

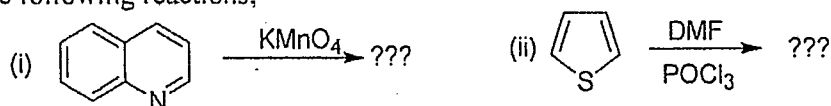


## Section-D

7. (a) Explain Fisher Indole synthesis with mechanism. (2)  
 (b) Complete following reactions; (2)



8. (a) Discuss the aromaticity in pyrrole, furan and thiophene. (2)  
 (b) Complete following reactions; (2)



## Section-E

9. (a) Why is C-N bond length in amide shorter than C-N bond length in amines?  
 (b) Why are ethers stored in dark colored bottles?  
 (c) What is hardening of oil?  
 (d) Why N-methylethylamine cannot be separated into enantiomeric components?  
 (e) Why do  $\alpha$ -hydrogens in nitroalkanes show acidic behaviour?  
 (f) Why electrophilic substitution in pyrrole occurs at C2 and not C3?

(1 mark each)

x-x-x