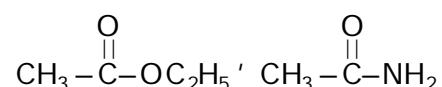
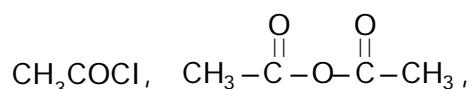


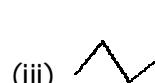
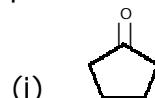
(4)



Unit - I

FkæF&- I

2. (a) Benzene and aniline show λ_{\max} at 203 and 235 respectively. Explain why higher λ_{\max} value is exhibited by aniline. 2
- (b) How would the IR spectrum of following pair of compounds differ 4½



- (c) Give IR values of C=O group in saturated aliphatic ketone and α, β unsaturated ketone. 1

- (a) ~~yes peeve SJeb Sæveeve keæj Ûelteer yel[>eacMe: 203 SJel 235 nm hej ebKeeF&otse nw Sæveeve keæj Ûelteer yel[yek[preeves keæj keæj Ce yel eeljes~~

A

(Printed Pages 11)

Roll No. _____

S-623

B.Sc. (Part-II) Examination, 2015

CHEMISTRY

Second Paper

(Organic)

Time Allowed : Three Hours] [Maximum Marks : 50

Note : Answer five questions in all. Question No.

1 is compulsory. Attempt one question from each unit.

keæj heej Sæveeve keæj Goej opeS~ ßæme meb 1 Dæfjeedje&nw
ßæme keæj FkæF&mes Skeæ ßæme keæj pæS~

1. Attempt all parts : 2 × 10
- (a) 2, 4, 6 trinitrophenol is referred as picric acid, although it does not contain any carboxylic group. Explain.
- (b) 2, 2, 2 trifluoroethanol is a stronger acid in comparison to ethanol. Explain.
- (c) Arenediazonium salts are more stable than alkanediazonium salts. Why.
- (d) Amines have higher boiling point in comparison to hydrocarbon of comparable

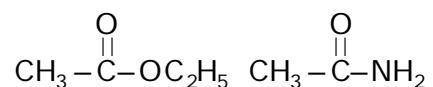
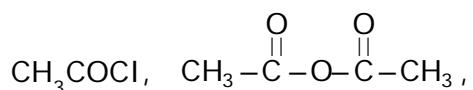
(2)

molecular mass but lower B.P. in comparison to alcohols of comparable molecular mass.

- (e) Explain why aldehydes undergo nucleophilic addition reaction more readily in comparison to ketones?
- (f) Aniline is less basic in comparison to ethylamine. Why.
- (g) From the values of the λ_{\max} identify the following dienes : 176, 217, 234 :



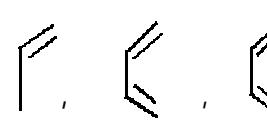
- (h) Explain why carboxylic acid exists as cyclic dimers not only in solid or solution phase but also in vapour phase.
- (i) Explain why HI cleaves ether better in comparison to HBr.
- (j) Arrange the following in order of their relative reactivity toward nucleophilic acyl substitution



(3)

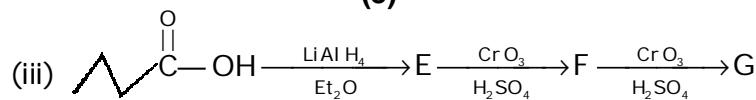
meYer Yeeie nue keapepeS :

- (a) 2, 4, 6 ~~SHF~~ ~~SH~~ keas ehefreaka Decue keanles ni peyekeak Fmecellkeak & keakeenkeefukeak «he nw kelleP
- (b) 2, 2, 2 ~~SH~~ ~~SH~~ kea legvee celNSkaa llyeve Decue nw kelleP
- (c) Sjare [eF]ceef/eUce uejeCe, Sukeeve [eF]ceef/eUce uejeCe kea legvee celDeeDekeak emLej nw kelleP
- (d) Sceefine legveetle DeeCeeDekeak oJUeceeve kea neF [eF]ceef/eUce kea legvee celNGUe Gyeuel es nw ueskeave Sukeameesie kea legvee celkeake Gyeuel es nq
- (e) Su[emeF[, keaeShere kea legvee celUejnDeseheadukeak S[emeve Deel es eaUee DeoDekeak Deemeevee mes odes nq
- (f) Sareeve, SeLeue Ssaree kea Dehef ee keace #eejde n
- (g) evecvedeeKele celnebdes ielies λ_{\max} kei ceeve mes [eF]eme kea henUeefreles : 176, 217, 234



- (h) keakeekepeukeak Decue ve keajeue "eue Uee meeeOeve Uej Ce cel ueskeave Yeehe Uej Ce celYer Ueacidle ef[cej ceepob ni mecePeedee
- (i) Flej kei efeUove celHI, HBr mes DeoDekeak GheUejga Deekakeak kea kelleWnP
- (j) vUejnDeesheadukeak SmeeFue Deel emLeeheve kea ebMee celNGvekeak meehefe Deel es eaUee keai eace cellefrecve kea JUeJemLee keapepeS-

(8)



- (b) Give the mechanism of autoxidation of ethers. 1½

F&j keâ mjele:-Deekeâkeâj Ce keâr ekaâdele De opeles

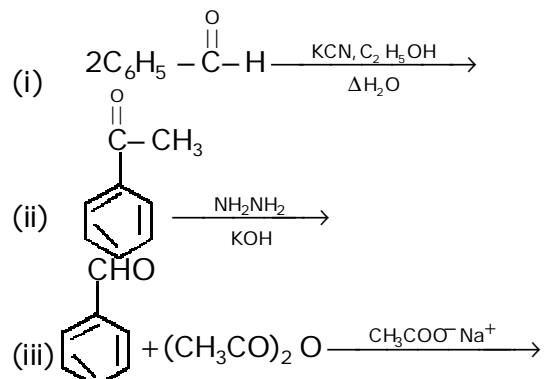
- (c) With the help of reaction show that claisen reaction is intramolecular. 2½

Deekeâr ceoo mesmece PeeFüeskeâr Umesve DeeYeeâr

Fvšâeuejeguej nw (DeeCJeelej keâ)

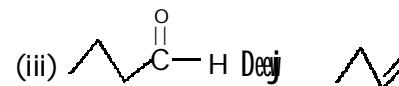
7. Complete the reaction and suggest the most probable mechanism. 2½ × 3

DeeYeeâr keâs heC&keâj WleLee meVeedele ekaâdele De ekaâKeS~



(5)

- (b) ekaâKele Ueekâe peel Ueekâe DeeF&Deej . mhekeâkeâ keâ yede Delej ekaâKeles :

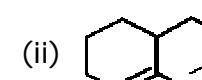
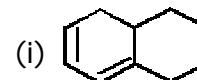


- (c) mellele SreHeâr keâsore SJeb Deutâe, yeaâe Demellele keâsore C=O «ekeâr DeeF&Deej eevee ekaâKeS~

3. (a) The IR spectrum is split into two main regions. What are they? Give the importance of each region. 3

- (b) What are the different transitions observed in UV spectrum. Arrange these transitions in order of decreasing energy. 2½

- (c) Calculate the λ_{max} of following compounds using woodward Fieser rule. 2

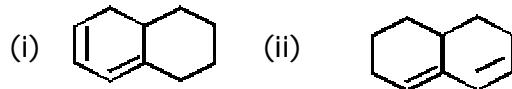


- (a) DeeF&Deej . mhekeâkeâ oes cel Kee #ekeâKele Yeepele nw Je ketee nP DeUekeâ #ekeâr keâr cenlJe oes

- (b) ekaâleves lej n keâ mekeâce Ce JUelkeâr mhekeâkeâ celhees peel es nP Fve mekeâce CeWkeâes Tpeek & keâ leseles >eace celWJUelkeâle keâeepes~

(6)

- (c) el/eceveeueKele Üeenfikeäelkä Je[Je [&efteämje] kää Devengeej λ_{max}
el/ekeäeueS-



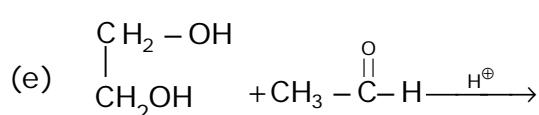
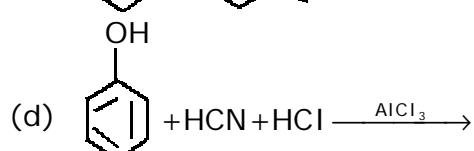
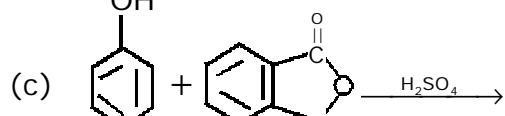
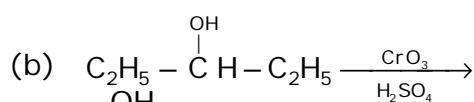
Unit - II

EkeæF&- |||

4. Give the name and structure of the products :

Fve Gtheeoewkeâ veece leLee melj Üevee efueKeW:

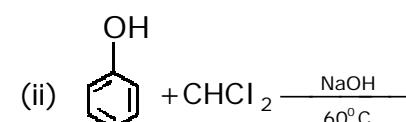
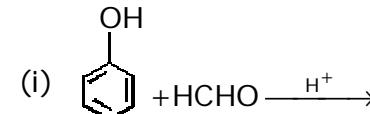
(a) 



5. (a) Predict the product and give the mechanism of following reactions. 6

(7)

- efveeueKele DeeYeefeaUeeDeelkeia G!heeo yeleeFS Deej Fveka
yeveees keer eeaUeeleDe oeepeS-



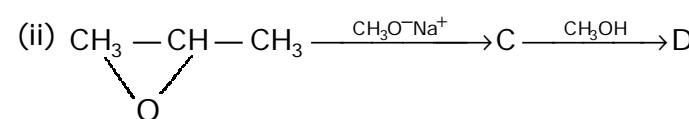
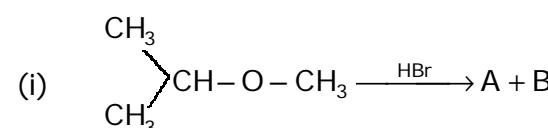
- (b) With the help of reactions using Lucas reagent explain how the three category of alcohols can be identified

uejeâeme Deelkeâclea keâe Ghejeeie keâj , DeelfeefâeeDeelkeâceo
ceoo meš Sukeâneue keâer IeereelBeseCeJuelkeâes keimes hen Üevee
pee mekeâlee níp

Unit - III

FkeâeF& - |||

6. (a) Identify the products formed in the following reactions. 3½



Unit - IV

Fracture - IV

8. (a) Synthesize the following compounds from aniline. 3

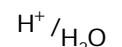
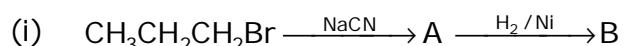
- (i) 1, 3, 5 tribromobenzene
- (ii) Fluoro benzene

(a) ~~Solve the reaction scheme given below~~ ~~and draw the structure of the product formed.~~

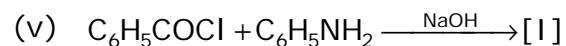
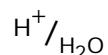
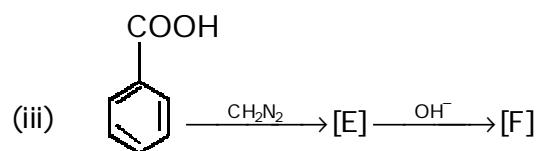
- (i) 1, 3, 5 ~~Substitution products~~
- (ii) ~~Halogen substitution products~~

(b) Complete the reaction. Give the name and structure of the product formed.

~~Given reaction scheme~~ ~~and draw the structure of the product formed.~~
Reaction scheme : 4 ½



(D)

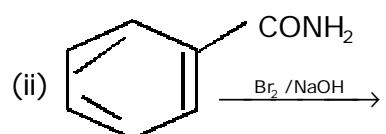
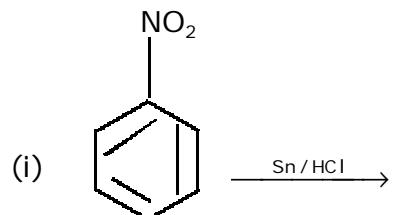


9. Give the product and mechanism of the fol-

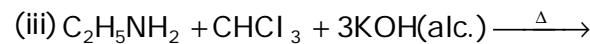
lowing reaction :

2½×3

efecveeKele DeelKeeféaUeeDeelKeé GIheeo IeLee eféaUeedLeeDe efueKe-



(11)



$$(v) \quad C_6H_5COCl + C_6H_5NH_2 \xrightarrow{NaOH} [I]$$

9. Give the product and mechanism of the fol-

lowing reaction :

2½×3

efecveeKele DeelKeeféaUeeDeelKeé GIheeo IeLee eféaUeedLeeDe efueKe-

S-623

S-623