F.Y.B.Sc SEM-I CHEMISTRY P-II

MARKS 100

TIME 3 HRS

VCD-26/11/19

NOTE: i) All the questions are compulsory.

ii) Figures to right indicate full marks.

iii) Use of non –programmable calculator / log table is allowed.

Q.1 A. Select the correct option. [12]

A) Percentage of Carbondioxide present in atmosphere--------

a) 78.09 b) 20.94 c) 0.03

B) C-P are --------pair

a) Similar b) different c) diagonal pair

C) ----------is a allotrope of carbon.

a) Graphite b) red phosphorus b) rhombic sulfur

D) Chemical formula of slaked lime is

a) CaO b) CaCO3 c) Ca(OH)2

E) D and L lactic acids are ----------of each other.

a) Enantiomer b) Distereomer c) geometrical isomer

F) outer electronic configuration of group 17 elements is ----------

a) Ns2 ,np5 b) ns2,np2 c) ns2,np4

G) Chiral carbon has ----------different functional group attached .

a) 3 b) 4 c) 5

H) tartaric acid has ----------stereoisomer.

a) 3 b) 5 c) 7

I) The unit in which molar refraction is expressed as ----------

a) Cm3mol b) cm3mol-1 c) cm-3mol-1

j) The liquids with high intermolecular attractive forces have ----------viscosity

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a) Low b) high c)intermediate

K) For second order reaction half time is ---------- proportional -to the initial concentration.

a) directly b) inversely c) not proportional

L) Which of the following rate law is of third order.

a) rate=k[A]2 [B]3 b) rate=k[A]3 [B]3 c) rate=k[A] [B]2

B. State whether true of False [03]

A) For all chemical reaction the order of molecularity of the reaction is always different

B) Metallic character increases across the period as we move from left to right .

C) If molecule is not superimposable on its mirror image ,then the molecule is chairal.

C. Match the following columns [05]

Column A	Column B
1) Order	a) Group 13
2) optiacal isomer	b)) can be zero
3)Aluminium	c) Second order reaction
4) Br_2-----2Br	d) Pseudo first order reaction
5) H_2+I2------2HI	e) enantiomer

Q2. Answer any four of the following: [20]

A) Explain the Half-life method of determination of order of reaction.

B) Explain the Isolation method of determination of order of reaction.

C) state the kinetic characteristics of second order reaction.

D) Explain with example i) Order of reaction ii) molecularity of reaction

E) Write a note on Classification of thermotropic crystal.

F)Write down application of liquid crystal

Q3. Answer any four of the following: [20]

A) Explain diagonal relationship between Be and Al.

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B) Define carbides. Give its general characteristics and classification.

C) Write applications of oxides and Hydroxides

D) Discuss the greenhouse effect.

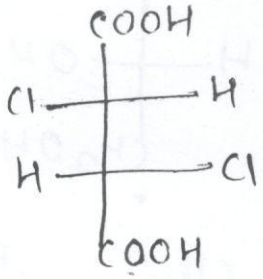
E) Explain anomalous behavior of second period elements any 2

F)) Discuss the effect of oxides of nitrogen on human health.

Q.4 Answer any four of the following: [20]

A) Define Distereoisomer .Enlist any 2 pairs of diasterimers of following

a)



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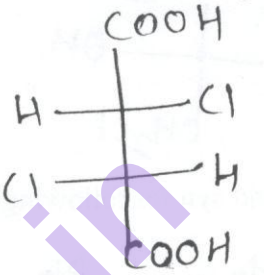
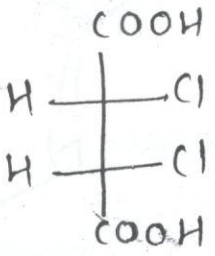


c)



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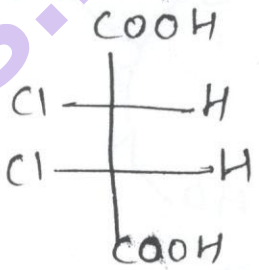
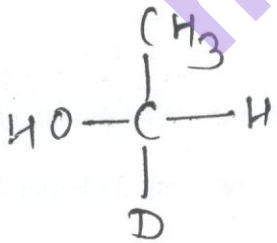


B) Distinguish between Mesoform racemic and racemic mixture

C) Write a note on diastereomers

D) Assign Ror S descripter for following molecule by mentioning priority order of substituent

a)



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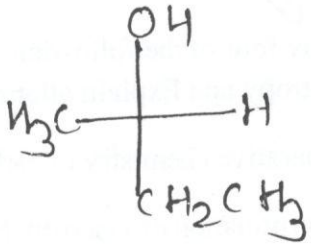
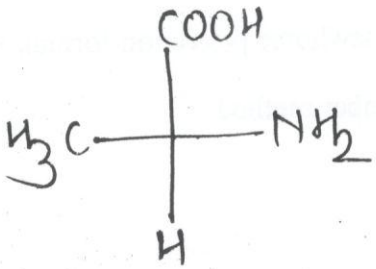
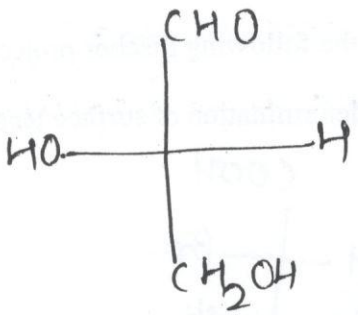


c)



d)



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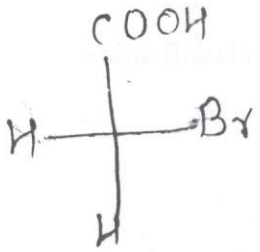
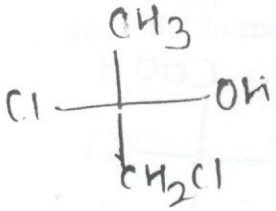
e)



E) Define the term a) Plane polarized light b) Enantiomerc) Racimic mixture d) Meso form e) Assymetric carbon atom

F) write D or L for the following compound

a)



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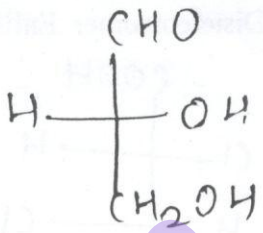
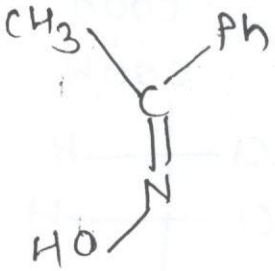
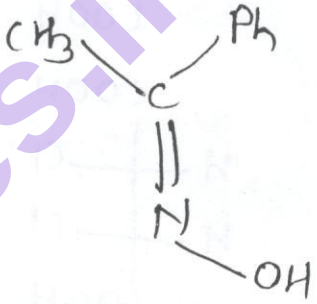


Write anti and syn for following compound

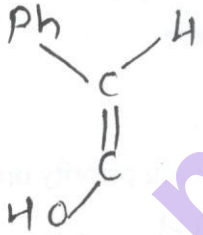
a)



b)



c)



Q5. Answer any four of the following: [20]

A) Define allotropy and Explain allotropes of carbon (i) Diamond (ii) Amorphous carbon

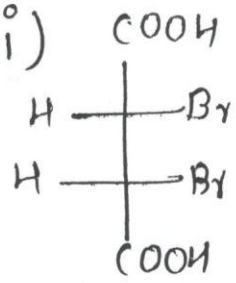
B) Write comparative chemistry of carbides and nitrides of group 1 and 2 elements

C) Explain determination of viscosity by ostwald's viscometer.

D) Explain the conformation of n-Butane.

E) Convert the following Fischer projection formula to sawhorse projection formula

(i)



F) Explain determination of surface tension by drop number method.

(ii)