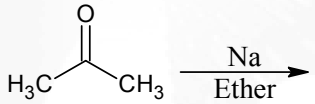
CHEMISTRY **Max.Marks:80**

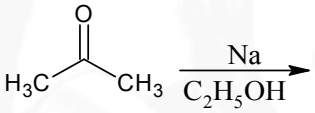
SECTION-1

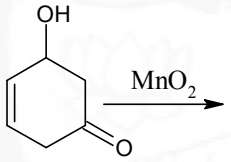
(SINGLE CORRECT CHOICE TYPE)

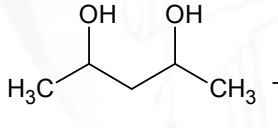
Section-I (Single Correct Answer Type, Total Marks: 24) contains 8 multiple choice questions. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct.** For each question you will be awarded 3 marks if you darken ONLY the bubble corresponding to the correct answer and zero marks if no bubble is darkened. In all other cases, minus one (-1) mark will be awarded.

1. Which of the following reaction is correctly represented?

A)  Major product.(Which give iodoform on reaction with NaOI).

B)  Major product.(Which do not give iodoform on reaction with NaOI).

C)  Major product.(Which give iodoform on reaction with NaOI).

D)  Major product.(Which do not give iodoform on reaction with NaOI).

2. Which of the following option is incorrect about the Glycerol?

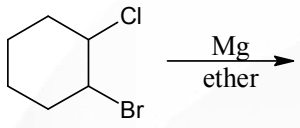
A) On heating with $KHSO_4$, it gives acrolein.

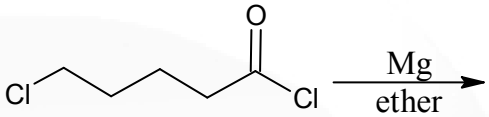
B) On heating with P/I_2, it gives saturated compound.

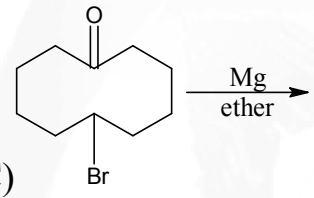
C) It can form triester with acetic anhydride.

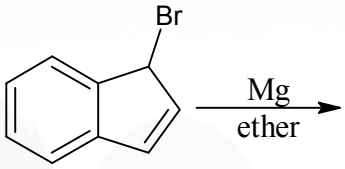
D) Glycerol is more viscous than ethylene glycol.

3. In which of the following case ,Grignard reagent can be isolated relatively?

A) 

B) 

C) 

D) 

4. A compound X containing C , H and O is unreactive towards sodium. It does not add up Bromine. On refluxing with excess of HI , X gives Y.Y on hydrolysis gives Z which can be converted to Y by the action of P and I_2.Compound Z on oxidation gives an acid(W) of equivalent mass 60. Which of the following option is wrong?

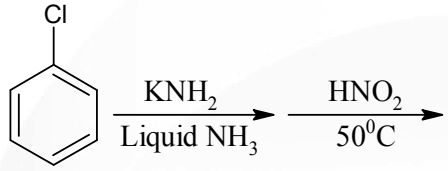
A) Degree of unsaturation of X and Y is same.

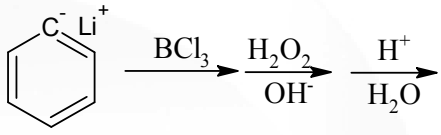
B) Y to Z conversion involves second order kinetics.

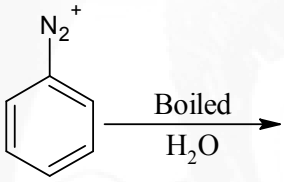
C) W is less acidic than picric acid.

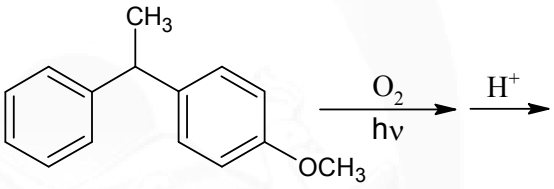
D) All compounds X, Y, Z and W shows metamerism.

5. In which of the following reaction , Phenol is not major compound?

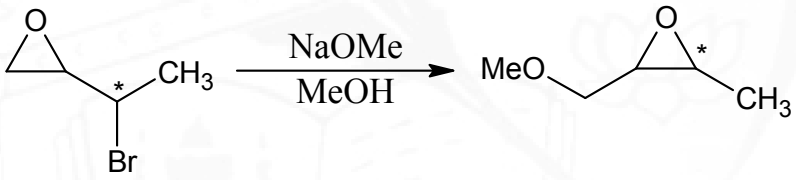
A) 

B) 

C) 

D) 

6. Which of the following statement(s) is/are true about the reaction given below?



A) It involves a carbocation intermediate.

B) Rearrangement is due to S_N1 reaction mechanism.

C) At the labelled atom, retention in configuration takes place.

D) It involves neighbouring group participation.

7. The monomeric unit of Melamine – Formaldehyde polymer

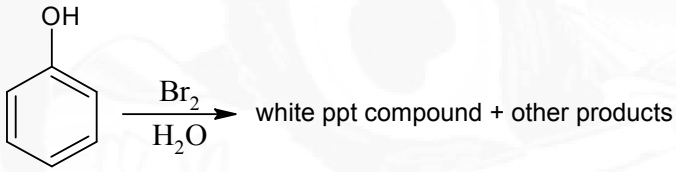
A) is a non aromatic

B) has 6 benzylic like hydrogens

C) has 6 delocalising p electrons

D) has 3 electrons of carbon in delocalization.

8.



Which of the following option is correct?

A) White ppt compound is aromatic.

B) Tautomerism is possible in all possible products.

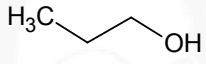
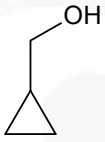
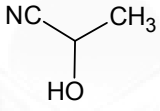
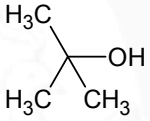
C) Other product can be 2, 4, 4, 6-tetrabromocyclohexadienone.

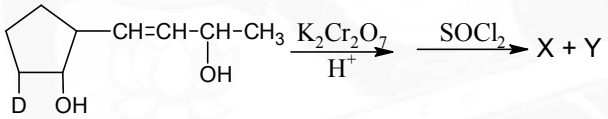
D) None of the statement is correct.

SECTION-2
(MORE THAN ONE TYPE)

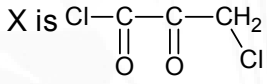
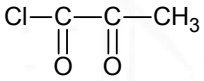
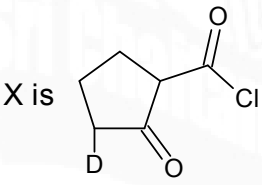
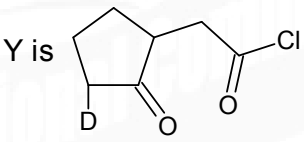
Section - II (Multiple Correct Answers Type, Total Marks: 16) contains 4 multiple choice questions. Each question has four choices (A), (B), (C) and (D) out of which ONE or MORE may be correct. For each question you will be awarded 4 marks if you darken ALL the bubble(s) corresponding to the correct answer(s) ONLY and zero marks otherwise. There are no negative marks in this section.

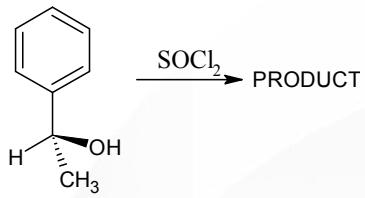
9. Which of the following alcohol(s) don't/doesn't give white turbidity on treatment with conc.HCl/$ZnCl_2$?

A) 
B) 
C) 
D) 

10. 

Identify the product X and Y are:

A) X is 
B) Y is 
C) X is 
D) Y is 

11. 

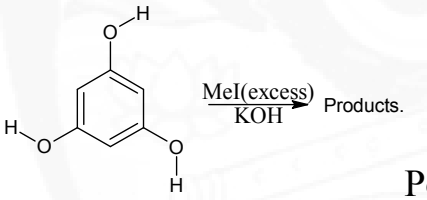
Which is/are correct statements regarding reaction?

A) The compounds produced by the reaction of the above product with aq OH^- can be resolved with optically active carboxylic acid.

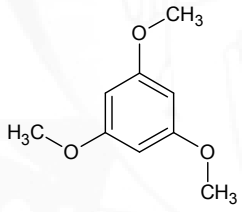
B) Stereo chemically the configuration is retained

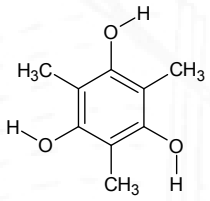
C) Stereo chemically Walden inversion takes place

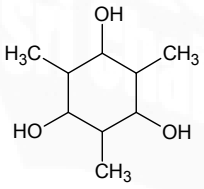
D) addition of pyridine drives the configuration from retention to Walden inversion

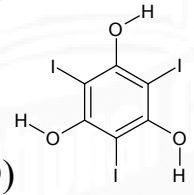
12. 

Possible products is/are….

A) 

B) 

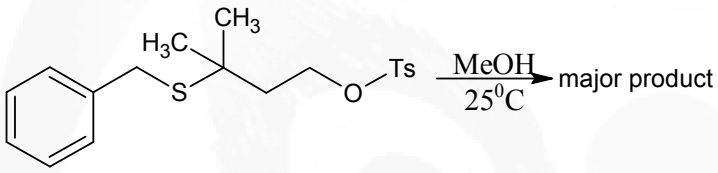
C) 

D) 

SECTION-3
[INTEGER TYPE]

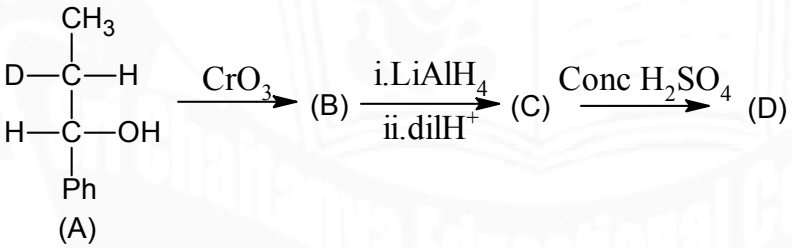
Section-III (Integer Answer Type, Total Marks: 24) contains 6 questions. The answer to each of the questions is a single-digit integer, ranging from 0 to 9. The bubble corresponding to the correct answer is to be darkened in the ORS. For each question you will be awarded 4 marks if you darken ONLY the bubble corresponding to the correct answer and zero marks otherwise. There are no negative marks in this section.

13.

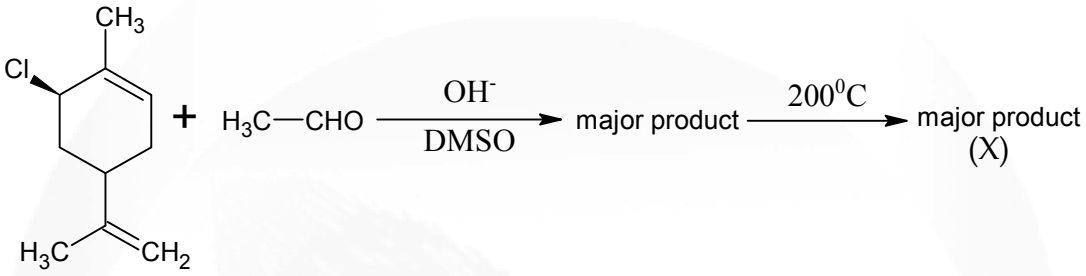


The sum of no of cyclic transition states and intermediates in the above reaction during the formation of product is/are....

14. How many carbon atoms (In A , B and C) changed their hybridization till the formation of D? (Consider each reaction and donot consider stereoisomerism)

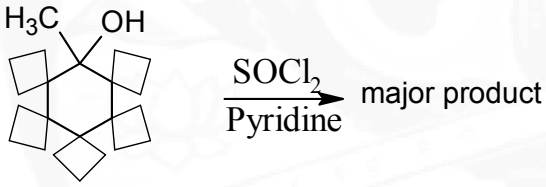


15.



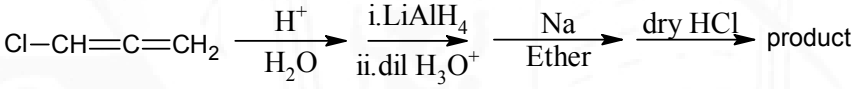
No of stereoisomers possible for X is

16.



Index of hydrogen of the major product is….

17.



No of 1^0 carbons in product is…..

18. No of moles of gases produced by the reaction of 1 mole of glycerol with 1 mole of oxalic acid at 260^0C is....

SECTION-4

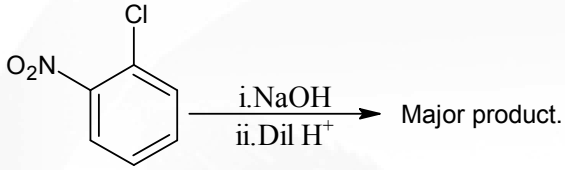
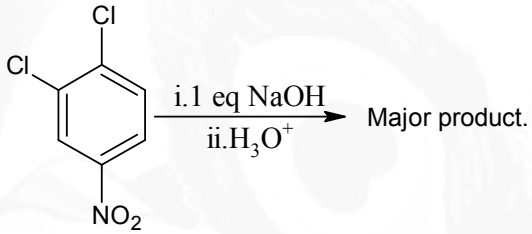
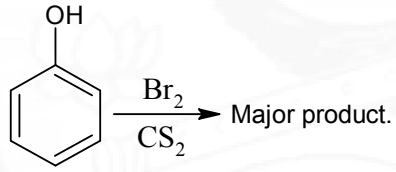
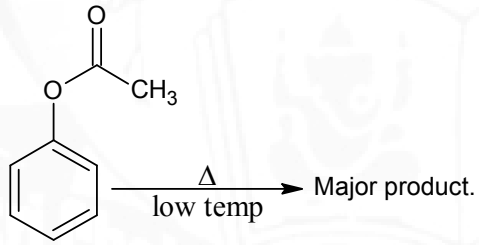
[Matrix Matching Type]

Section-IV (Matrix-Match Type, Total Marks: 16) contains 2 questions. Each question has four statements (A, B, C and D) given in Column I and five statements (p, q, r, s and t) in Column II. Any given statement in Column I can have correct matching with ONE or MORE statement(s) given in Column II. For example, if for a given question, statement B matches with the statements given in q and r, then for the particular question, against statement B, darken the bubbles corresponding to q and r in the ORS. For each question you will be awarded 2 marks for each row in which you have darkened ALL the bubble(s) corresponding to the correct answer(s) ONLY and zero marks otherwise. Thus, each question in this section carries a maximum of 8 marks. There are no negative marks in this section.

19.

COLUMN-1	COLUMN-2
A) Bakelite	P) Electrophilic aromatic substitution involved in its preparation from monomers
B) PHBV	Q) Addition–Elimination mechanism involved in its preparation from monomers
C) Teflon	R) Free radical mechanism involved in its preparation from monomers
D) Dacron	S) Condensation polymer
	T) One of the monomer liberates H_2 gas on addition of Na metal

20.

COLUMN-1	COLUMN-2
A) 	P) Product is more acidic than Phenol
B) 	Q) Product is soluble in aq.NaOH
C) 	R) Product liberate CO_2 gas on addition of $NaHCO_3$
D) 	S) Respond positively to neutral $FeCl_3$ test.
	T) Either reactant or product has at least three positional isomers.