CHEMISTRY **Max. Marks: 80**

SECTION – I
(SINGLE CORRECT CHOICE TYPE)

This section contains ***7* multiple choice questions.** Each question has 4 choices (A), (B), (C) and (D) for its answer, out of which **ONLY ONE** is correct

1.

2-bromophenol $\xrightarrow[\text{2. Butanoyl chloride, } AlCl_3 \\ \text{3. Zn(Hg), HCl} \\ \text{4. conc HBr, heat}]{\text{1. } CH_3I, \text{ base}}$?

The IUPAC name of the product in the above reaction is

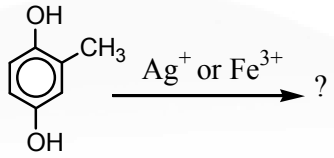
A) 1-butanoyl-3-bromo-4-methoxybenzene

B) 2-bromo-4-butylphenol

C) 3-bromo-1-butyl-4-methoxybenzene

D) 3,4-dibromo-1- butanoylbenzene

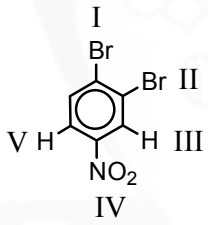
2. What product is likely to be obtained by the action of Ag^{+} or Fe^{+3} on the following substance?



Which of the following option is incorrect is for this reaction?

A) It is a redox reaction
B) Quinone derivative is the final product
C) The final product can show tautomerisation
D) The reactant can not be inhibitor in the free radical reactions.

3. Which is the leaving group when the following substance reacts with sodium cyanide in DMSO solution?



A) I
B) II
C) III
D) IV

4. Which is the best way to prepare 3-methoxypentane via the Williamson method?

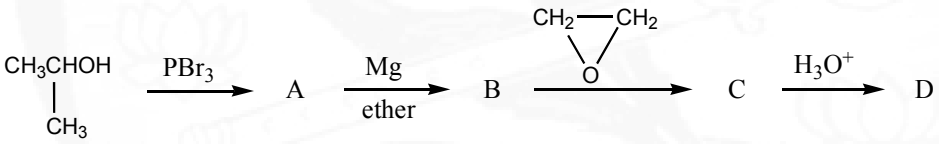
A) $CH_3OH + CH_3CH_2CHOHCH_2CH_3 + H_2SO_4,\ 140°C$

B) $CH_3OH + (CH_3)_2CHCH_2CH_2OH + H_2SO_4,\ 140°C$

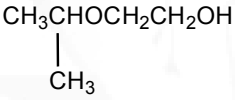
C) $CH_3ONa + (CH_3CH_2)_2CHBr$

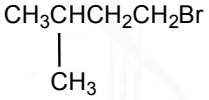
D) $CH_3I + (CH_3CH_2)_2CHONa$

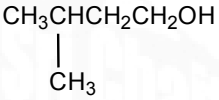
5. The final product, D, in the following reaction sequence,

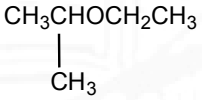


, would be?

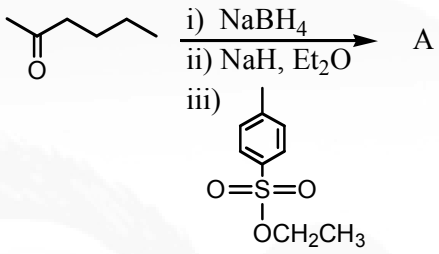
A) 

B) 

C) 

D) 

6. What would be the major product of the following reaction?



A) $CH_3CH_2OCH(CH_3)CH_2CH_2CH_2CH_3$

B) $(CH_3CH_2O)_2CHCHOHCH_2CH_2CH_3$

C) $(CH_3CH_2)_2CHOHCH_2CH_2CHOHCH_3$

D) $CH_3OCH(C_2H_5)CH_2CH_2CH_2CH_3$

E) $CH_3CH_2CH(OCH_3)CH_2CH_2CHOHCH_3$

7. Which of the following is wrong:

A) PMMA is called plexiglass B) PTFE is called teflon

C) SBR is called natural rubber D) LDPE is called low density polyethylene

SECTION – II
(MORE THAN ONE TYPE)

This section contains 4 **multiple choice questions.** Each question has four choices a), b), c), d) out of which **ONE OR MORE** may be correct.

8. Which of these is an acceptable synthesis of phenetole (ethyl phenyl ether)?

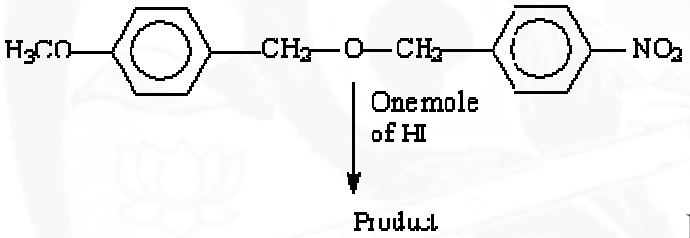
A) Chlorobenzene $\xrightarrow[100^oC]{CH_3CH_2ONa}$

B) Sodium phenoxide $\xrightarrow[70^oC]{CH_3CH_2I}$

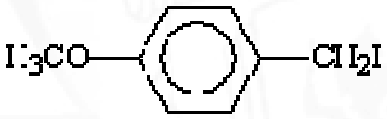
C) Sodium phenoxide $\xrightarrow[100^oC]{(CH_3CH_2O)_2SO_2}$

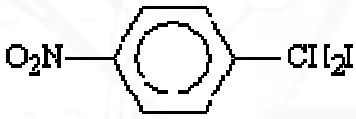
D) Phenol $\xrightarrow[70^oC]{CH_3CH_2OH,\ H_2SO_4}$

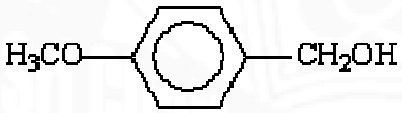
9.

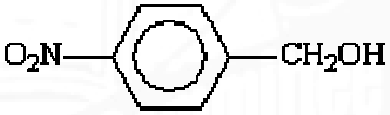


Products are

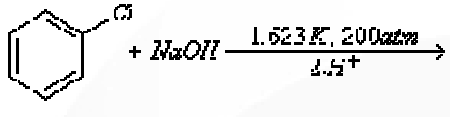
A) 

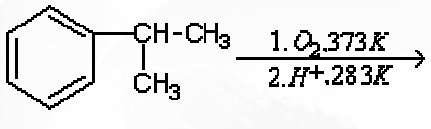
B) 

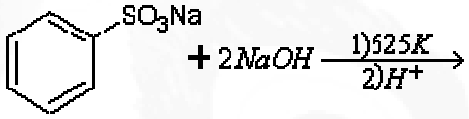
C) 

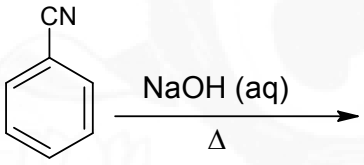
D) 

10. Which of the following represents preperation of phenol ?

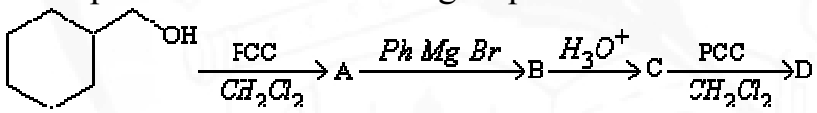
A) 

B) 

C) 

D) 

11. Final product of the following sequence is



Which of the following option(s) is/are correct?

A) The unsaturated ketone of A is not possible

B) C gives blue colour solution in Victor Meyer test.

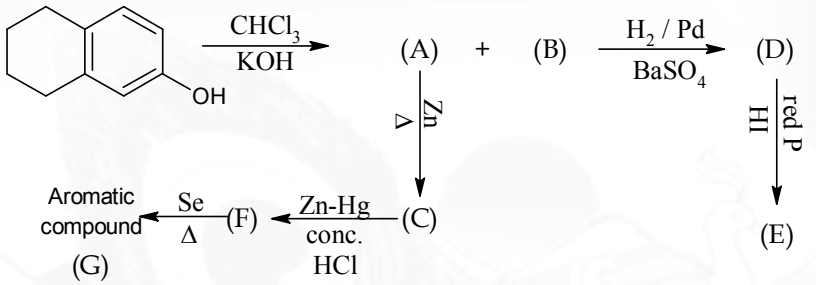
C) D is a homologous of A

D) A and C gives turbidity immediately with Lucas reagent

SECTION – III
(PARAGRAPH TYPE)

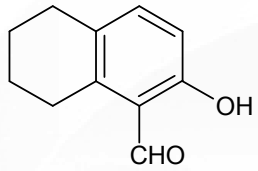
This section contains 2 **paragraphs.** Each of these questions has four choices a), b), c) and d) out of which ONLY ONE is correct

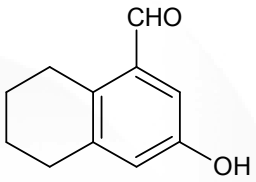
PASSAGE-1

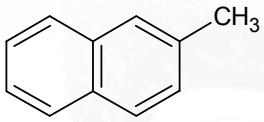


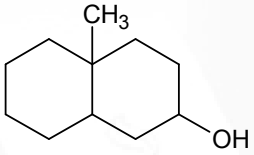
12. Which of the following option is incorrect?
    A) No of positional isomers of G is 2 .
    B) E on heating in the presence of Se gives an aromatic compound.
    C) D forms blue color solution in the Victor Meyer test.
    D) No of 2^0 carbons in E are 8.
13. G is
    A) A non aromatic compound.
    B) Aromatic compound with 2 canonical structures.
    C) R.E of G per ring is lesser than that of Benzene.
    D) A heterocyclic compound.

14. Which of the following are correctly matched?

A) (B) is 

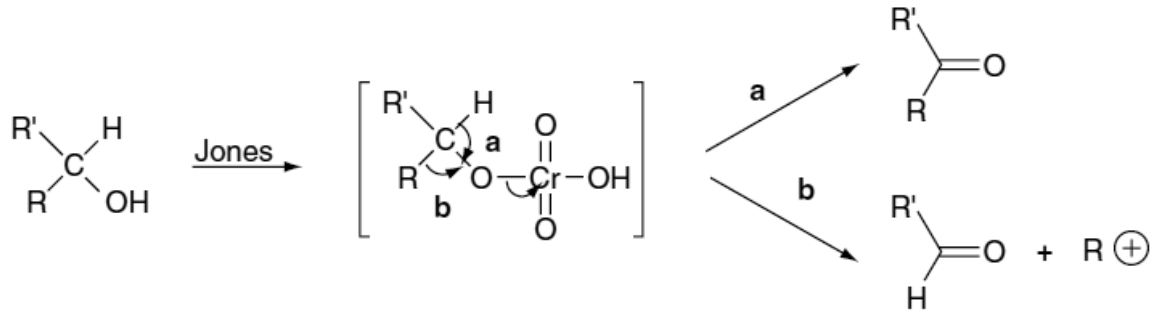
B) (A) is 

C) (C) is 

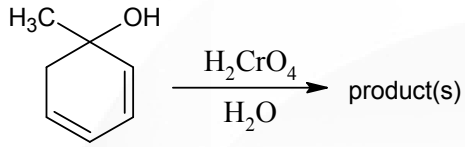
D) (D) is 

Paragraph for Questions Nos. 15 to 16

Oxidation of alcohols with Jones reagent gives rearranged and also fragmentized product(s).If tertiary alcohol is present, it will give rearranged products with the help of Carbocation formation.



15.



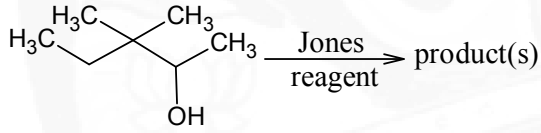
A) Only one product is possible.

B) Product(s) cannot have heterocyclic isomer.

C) Product is non aromatic compound.

D) Product is a carbonyl compound.

16.



A) Only one product is possible.

B) One of the compounds (alcohol) gives turbidity very slowly with Lucas reagent.

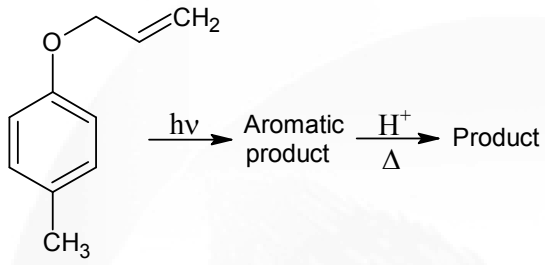
C) All the product(s) have same no of carbons.

D) None of the above statement is correct.

SECTION – IV
INTEGER TYPE

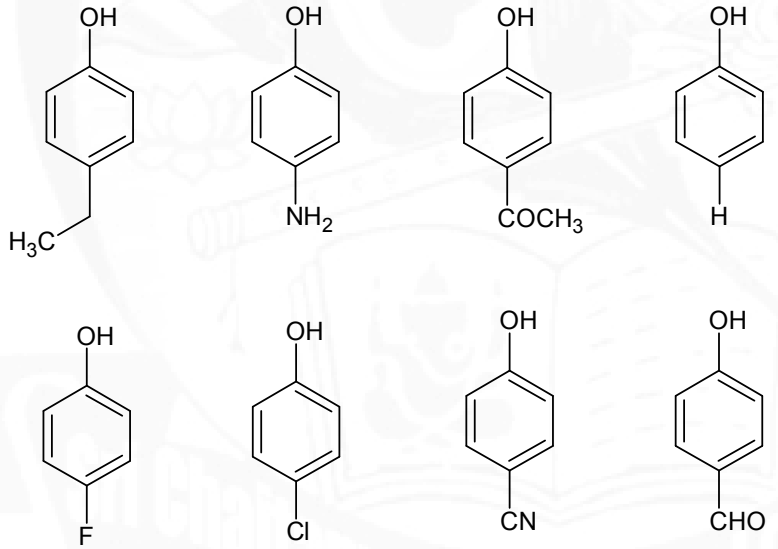
(This section contains **7 questions.** The answer to each question is a single digit integer ranging from 0 to 9. The correct digit below the question number in the ORS is to be bubbled)

17.

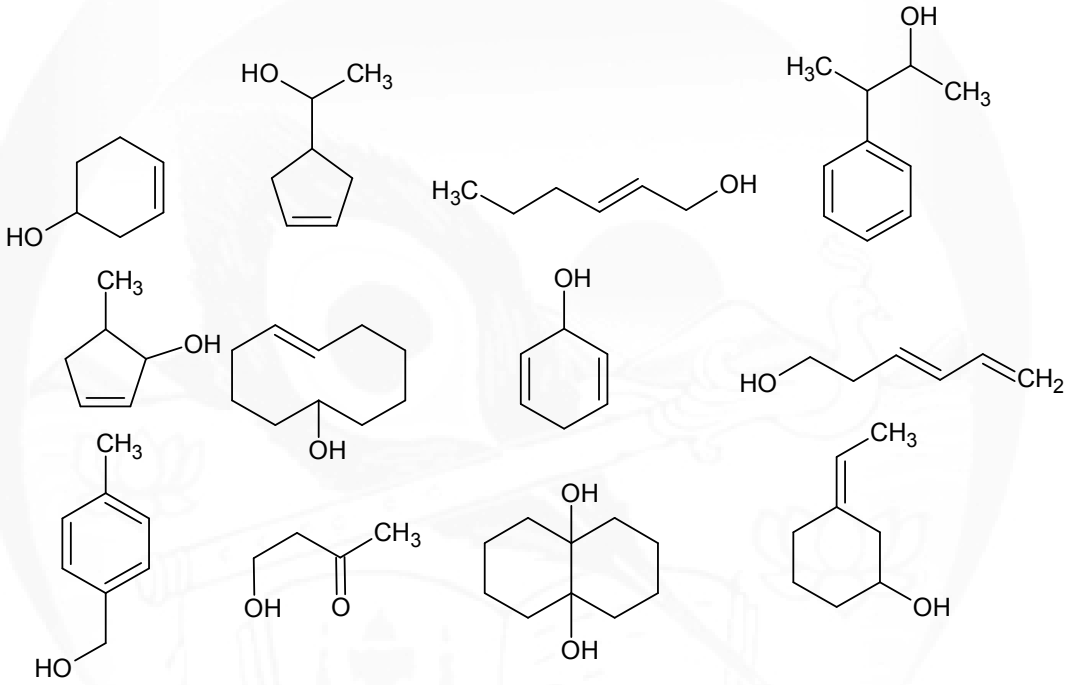


No of enolisable protons (Consider keto form of the product) in the product is…..

18. How many of the following phenols are more acidic than p-cresol?



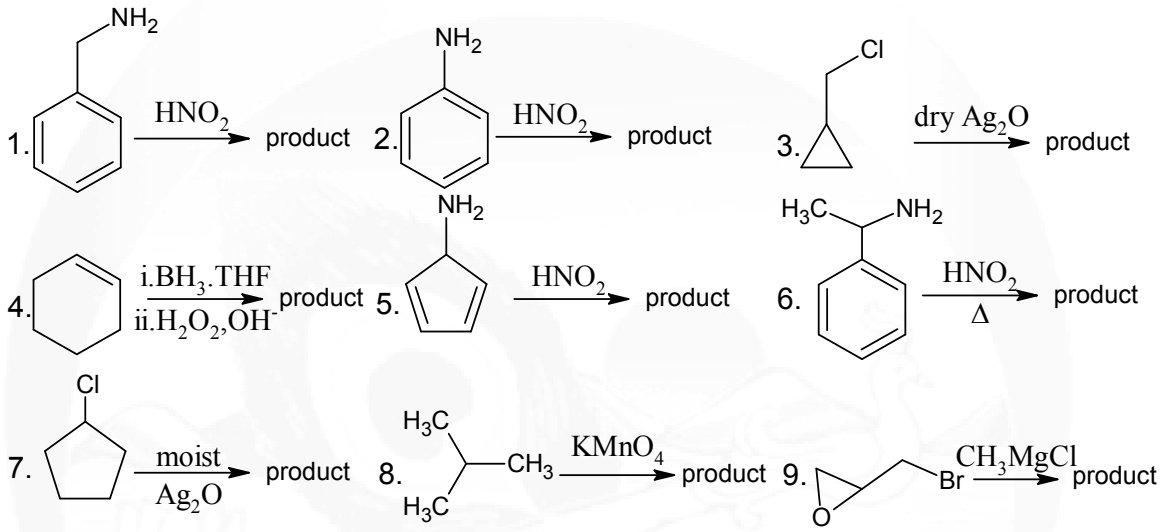
19. In how many of the following cases ,after dehydration with conc.H_2SO_4 no of sp^2 stereogenic centers of major product will be same as in reactant?



20. No of distinguishable possible products (excluding stereo isomers) in the following reaction is/are….

1,2-dimethyl cyclohexane-1,2-diol $\xrightarrow{H^+}$ product(s). cosider only carbonyl compounds.

21. In how many of the following reactions alcohol is the major product?



22. How many of the polymers following polymers are co-polymers?

Teflon	Bakelite	Novolac	Melamine	Glyptal	Buna-S
Buna-N	Polythene	PVC	PHBV	HDPE	LDPE

23. Bicarbocyclic , Aromatic , Dicarbonyl compound (A) $\xrightarrow[\text{eher}]{\text{Na}}$ (B) $\xrightarrow[\text{gas}]{\text{HCl}}$ (C) $\xrightarrow[\text{ii.HCl gas}]{\text{i.LiAlH}_4}$ (D) $\xrightarrow[300^0\text{C}]{\text{Cu}}$ (A)

None of the compound gives iodoform test.

The minimum no of possible C-H bonds in A is 2X.The value of X is