CHEMISTRY

61. Which of the following statement is true?

1) Acetals are never formed in basic medium

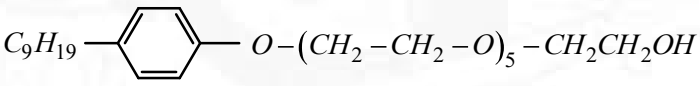
2) The dipole moment of 1-butene is less than that of propanaldehyde.

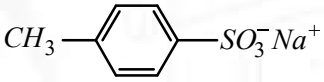
3) The heat of combustion of butanal is greater than that of butanone.

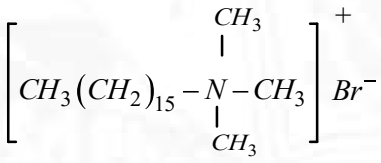
4) All of these

62. Which of the following is an example of liquid dishwashing detergent?

1) $CH_3-(CH_2)_{10}-CH_2OSO_3^-Na^+$

2) 

3) 

4) 

63. Which of the following statement is correct?

1) Some Tranquillizers function by inhibiting the enzymes which catalyze the degradation of noradrenaline

2) Tranquillizers are narcotic drugs

3) Tranquillizers are chemical compounds that do not effect the message transfer from nerve to receptor

4) Tranquillizers are chemical compounds that can relieve pain and fever.

64. Which of the following chemical can best employed for sweetening of food items at cooking temperature and does not provide calories?

1) Sucrose 2) Glucose

3) Aspartame 4) Sucralose

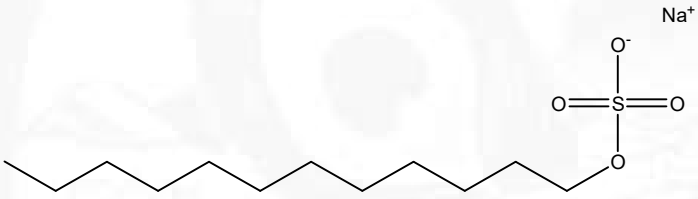
65. Compound which is added to soap to impart antiseptic properties is:

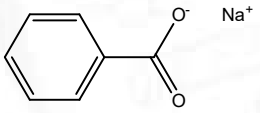
1) sodium lauryl sulphate 2) sodium dodecyl benzene sulphate

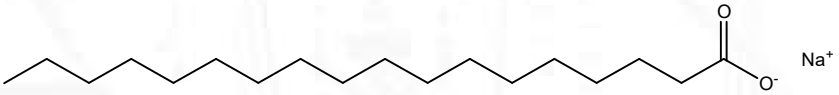
3) rosin 4) Bithionol

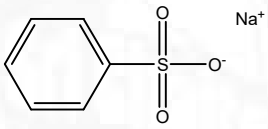
66. A narrow spectrum antibiotic is active against:
1) gram-positive bacteria only
2) gram-negative bacteria only
3) single organism or one disease
4) both gram-positive and gram-negative bacteria

67. Which of the following is food preservative?

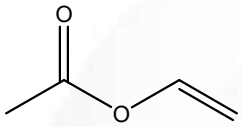
1) 

2) 

3) 

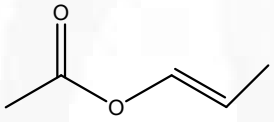
4) 

68. The following two enol acetates (A) and (B) are hydrolysed separately to give products (P) and (Q) respectively along with acetic acid.



(A)

$\xrightarrow[(2)\,H_3O^+]{(1)\,NaOH} CH_3COOH + (P)$



(B)

$\xrightarrow[(2)\,H_3O^+]{(1)\,NaOH} CH_3COOH + (Q)$

Which of the following reagent can be able to distinguish between the products (P) and (Q)?

1) Brady's reagent 2) Luca's reagent

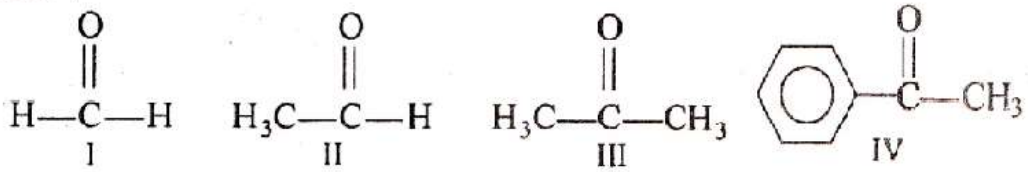
3) Tollen's reagent 4) I_2 / NaOH

69. Which of the following is not a target molecule for drug function in Human body?

1) Carbohydrates 2) Lipids

3) Vitamins 4) Proteins

70. Arrange the following compounds in decreasing order of nucleophilic addition reaction :



1) II>IV>III>I 2) I>II>III>IV

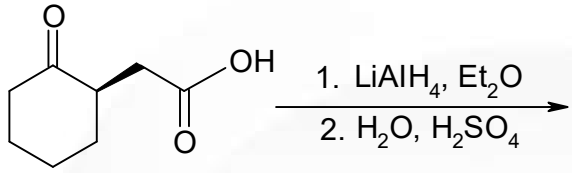
3) IV>III>II>I 4) II>III>IV>I

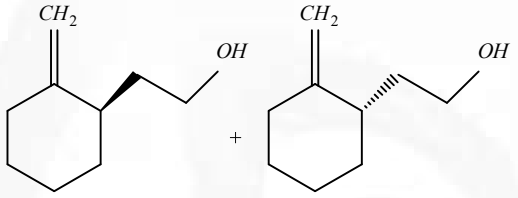
71. How many compounds (excluding isomers if any) with molecular formula $C_5H_{10}O$ may be reduced with $NaBH_4$ to a primary alcohol?

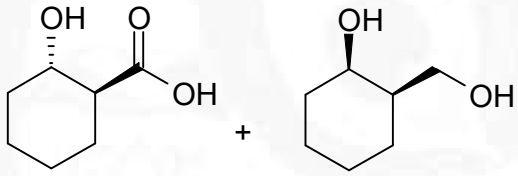
1) 2 2) 3

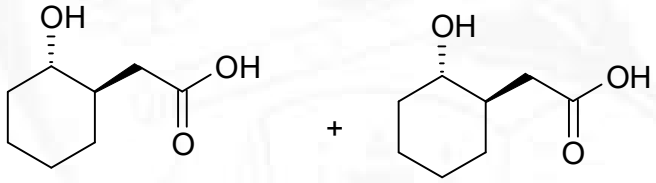
3) 4 4) 5

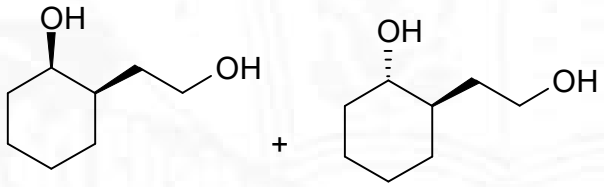
72. What are the major products of the following reaction?



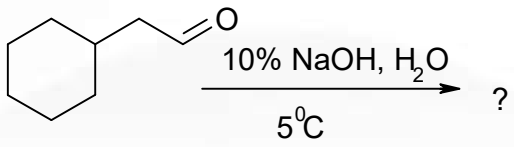
1)


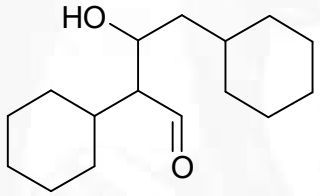
2)


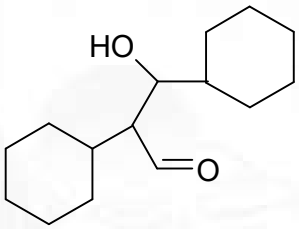
3)


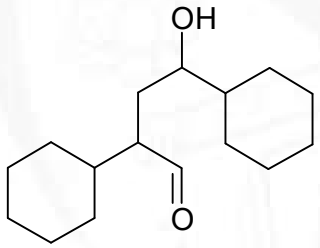
4)


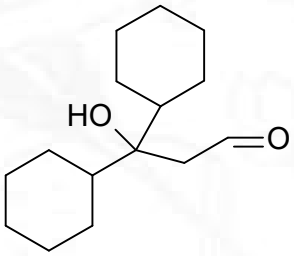
73. What is the product of the following reaction?



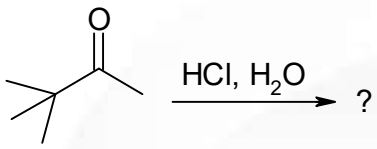
1) 

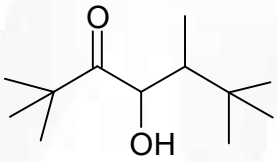
2) 

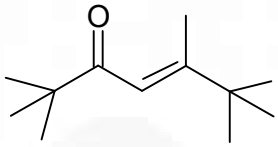
3) 

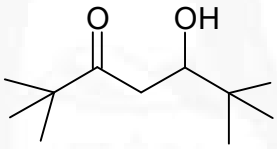
4) 

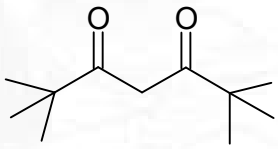
74. What is the major product of the following reaction?



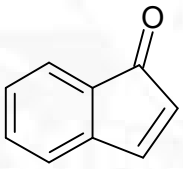
1) 

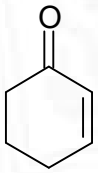
2) 

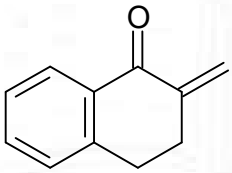
3) 

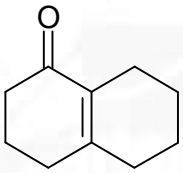
4) 

75. Which of the following is NOT the product of an intramolecular aldol condensation?

1) 

2) 

3) 

4) 

76 Which of the following optically active compounds will be racemized on treatment with warm alcoholic sodium ethoxide?

I.(R)-2,2,6-trimethylcyclohexanone

II.(R)-2,2,5-trimethylcyclohexanone

III.(R)-2-methyl-2-phenylcyclohexanone

IV.(R)-4-methyl-2-cyclohexen-1-one

1) **I** and **II** 2) **I** and **III**

3) **I** and **IV** 4) all compounds will be racemized

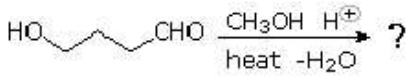
77 A $C_5H_{12}O$ compound is optically active, and is oxidized by PCC in CH_2Cl_2 to an optically active $C_5H_{10}O$ product, which is racemized in acid or base.

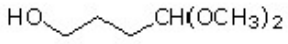
Which of the following best fits these facts related to structure of compound A?

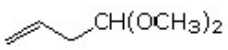
1) 2-pentanol 2) 2-methoxybutane

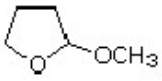
3) 2-methyl-1-butanol 4) 3-methyl-1-butanol

78. What is the product of the following reaction?



1) 

2) 

3) 

4) 

79. Which of the following procedures **would not** be suitable for preparing 3-methyl-1-phenyl-1-butanone, $C_6H_5COCH_2CH(CH_3)_2$?

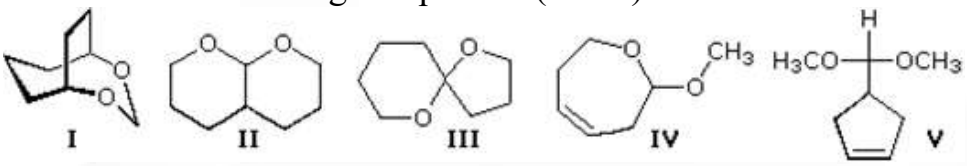
1) **(i)** $C_6H_5COCH{=}CHCH_3$ + $(CH_3)_2CuLi$ in ether; **(ii)** H_3O^+ workup

2) **(i)** benzene + $(CH_3)_2CHCH_2COCl$ & $AlCl_3$**.**

3) **(i)** C_6H_5MgBr + $(CH_3)_2CHCH_2CHO$ in ether; **(ii)** H_3O^+ workup; **(iii)** PCC in CH_2Cl_2

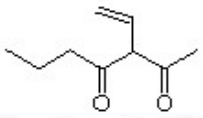
4) **(i)** $(CH_3)_2CHMgBr$ + $C_6H_5COCH_3$ in ether; **(ii)** H_3O^+ workup; **(iii)** PCC in CH_2Cl_2

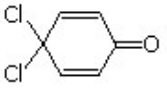
80. Which of the following compounds (I to V) should not be classified as an acetal?

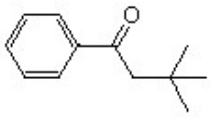


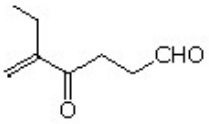
1) II & III
2) IV
3) I
4) none (they are all acetals)

81. Which of the following compound is not named (need not be IUPAC name) correctly?

1)  3-vinyl-2,4-heptanedione

2)  4,4-dichloro-2,5-cyclohexadien-1-one

3)  3,3-dimethyl-1-phenyl-1-butanone

4)  5-methylene-4-oxo-heptanal

82. Which of the following statements **is not** generally true?

1) C=O is stronger than an equivalent C=C

2) C=O has a larger bond dipole than C=C

3) aldehydes and ketones have higher boiling points than similarly sized alkenes

4) alkenes add nucleophiles more rapidly than aldehydes or ketones of similar structure

83 Which of the following reaction is a good method for preparing an aldehyde?

1) Jones' reagent and a 1°-alcohol 2) Jones' reagent and a 2°-alcohol

3) PCC and a 1°-alcohol 4) H_2SO_4 a 1°-alcohol and heat

84. Paraldehyde is obtained by polymerisation of CH_3CHO in presence of conc. H_2SO_4 which of the following statements regarding paraldehyde is wrong

1) all carbon atoms are sp^3 hybridised

2) each oxygen atom bonded to two carbon atoms

3) each carbon atom bonded to two oxygen atoms

4) It is a cyclic compound

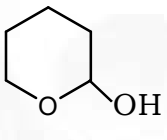
85. Formalin is an aqueous solution of formaldehyde. The approximate percentage is

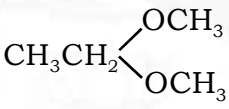
1) 10% 2) 40% 3) 80% 4) 95%

86. Number of stereoisomers produced when benzil (C_6H_5 - CO - CO - C_6H_5) is reduced with Lithium aluminium hydride

1) 4 2) 3 3) 6 4) 2

87. Which of the following compounds will give positive Tollen's test ?

(I) $CH_3.CH_2.CH_2.CH_2.CH(OH)OCH_3$ (II) 

(III)  (IV) CH_3CHO

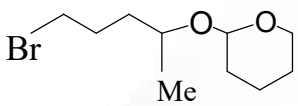
1) I,II,III 2) I,II,IV 3) I,II,III,IV 4) only IV

88. Phenyl glyoxal is ketoaldehyde having the formula C_6H_5COCHO. This compound reacts in presence of aqueous NaOH gives the product

1) $C_6H_5COCOO^-$ 2) $C_6H_5CHOHCOO^-$

3) $C_6H_5COCH_2OH$ 4) $C_6H_5CHOHCHO$

89.



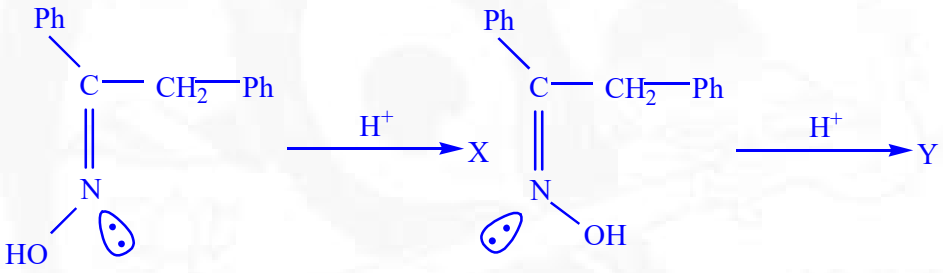
(I)

One of the products of hydrolysis of the compound (I) is,

1) 5-hydroxy-2-pentanone 2) 4-hydroxy butanal

3) 4-hydroxy -2-pentanone 4) 5-hydroxy pentanal

90.



Then X and Y are respectively;

1) x = $PhCH_2CONHPh$
y = $PhCONHCH_2Ph$

2) x = $PhCONHCH_2Ph$
y = $PhCH_2CONHPh$

3) x = $PhCH_2CONHPh$
y = $PhCH_2CONHPh$

4) x= $PhCONHCH_2Ph$
y = $PhCONHCH_2Ph$