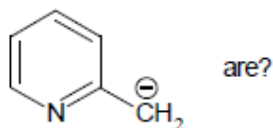


## (Multiple Choice Questions)

This section contains **90 multiple choice questions**. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **ONLY ONE** is correct. (+4, -1)

1. The number of resonating structures possible for

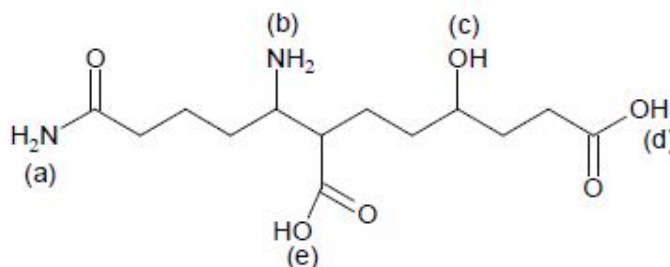


- (1) 4                      (2) 5                      (3) 3                      (4) 6

2. Non-reducing sugar among the following is:

- (1) Glucose              (2) Galactose              (3) Fructose              (4) Sucrose

3. The most acidic portion among the following is:

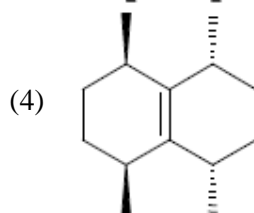
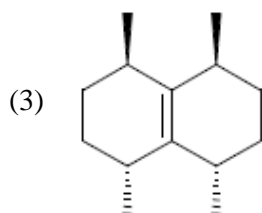
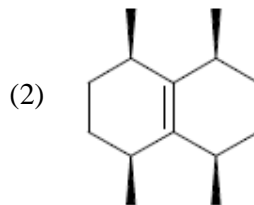
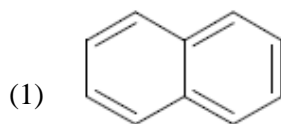


- (1) a                      (2) c                      (3) e                      (4) b

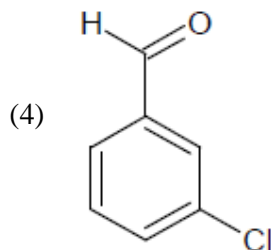
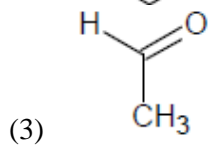
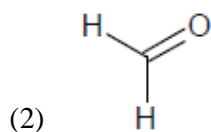
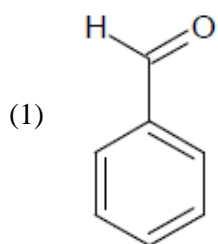
4. Carbylamine test is performed in alcoholic KOH by heating a mixture of

- (1) Chloroform and silver powder  
(2) Trihalogenated methane and a primary amine  
(3) An alkyl halide and a primary amine  
(4) An alkyl cyanide and a primary amine

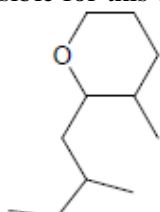
5. Which one of the following does not contain centre of symmetry?



6. In which compound(s) -CHO group is neither oxidized nor reduced upon reaction with NaOH?



7. The total number of optical isomers possible for this compound are?



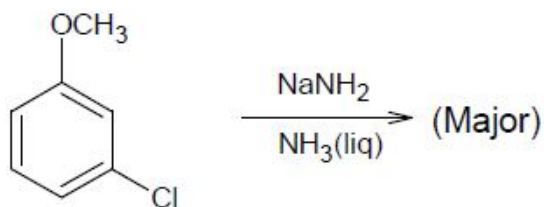
(1) 9

(2) 8

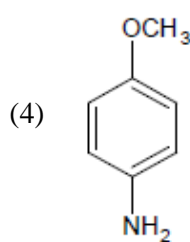
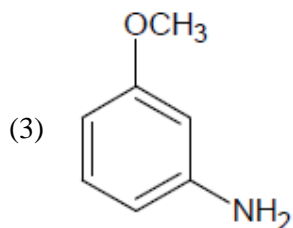
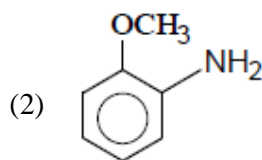
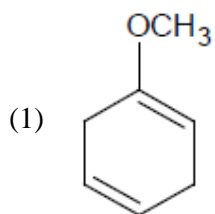
(3) 10

(4) 16

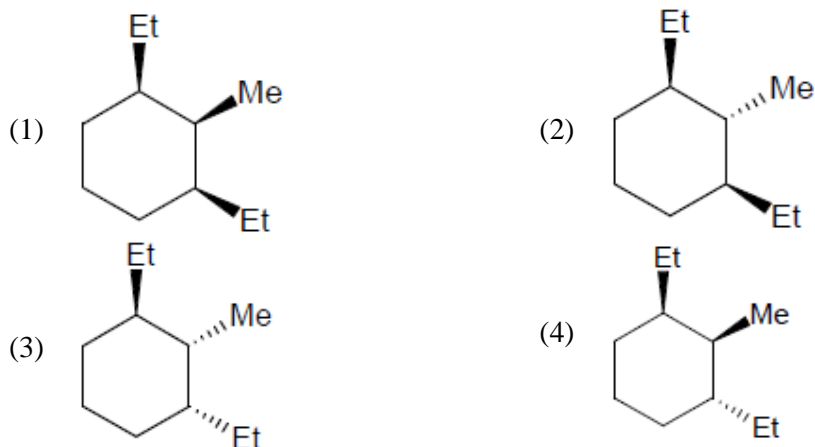
8.



The major product obtained in the above reaction is;



9. Which of the following has the least negative heat of combustion?



10. Analgesics are used to get relief from

- (1) pain                      (2) inflammation              (3) depression              (4) fever

11. Which of the following agents is responsible for generating chlorine radicals into stratosphere?

- (1) Smog                      (2) NO<sub>2</sub>                      (3) UV radiation              (4) CFC

12. The most preferred drug for neutralizing acidity of stomach among the following is

- (1) NaOH                      (2) NaHCO<sub>3</sub>                      (3) Mg(OH)<sub>2</sub>                      (4) KHCO<sub>3</sub>

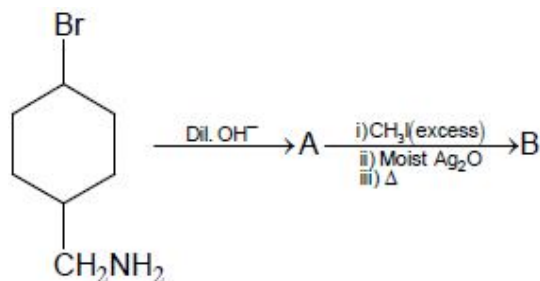
13. Which one is a copolymer?

- (1) PVC                      (2) Polypropene                      (3) Polystyrene                      (4) Glyptal

14. Each polypeptide in a protein has aminoacids linked with each other in a specific sequence. This sequence of amino acids is said to be \_\_\_\_\_.

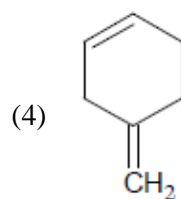
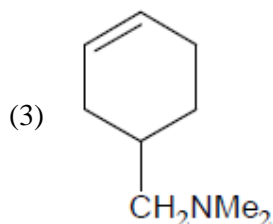
- (1) Primary structure of proteins                      (2) Secondary structure of proteins  
(3) Tertiary structure of proteins                      (4) Quaternary structure of proteins

15.

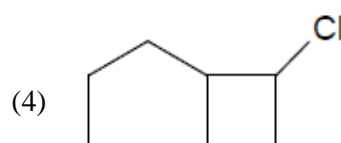
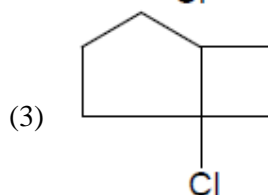
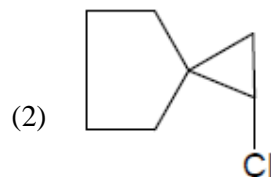
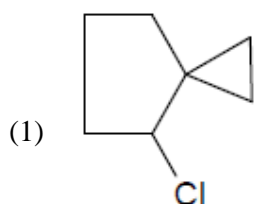
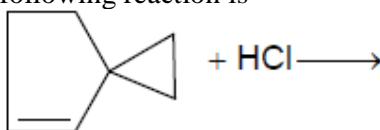


Identify the product in the following sequence of reaction?

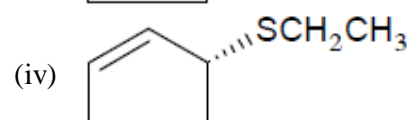
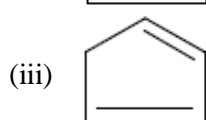
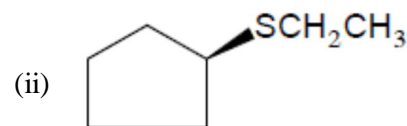
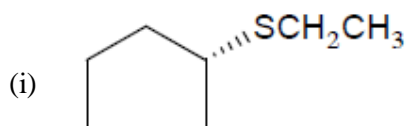
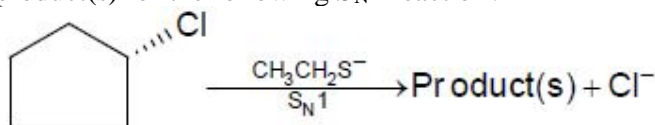




16. Which of the following statements is not true about glucose?  
 (1) It is aldohexose (2) On heating with HI it forms n-hexane  
 (3) It is present in furanose form. (4) It does not give 2,4 -DNP test
17. Phosphodiester link connects nucleotides between which of the following pair of carbon atoms of the sugar?  
 (1) 1' and 5' (2) 2' and 3' (3) 3' and 4' (4) 3' and 5'
18. Major product obtained by the following reaction is



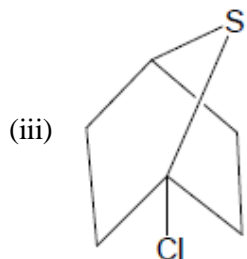
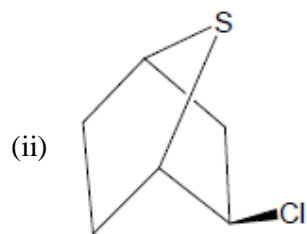
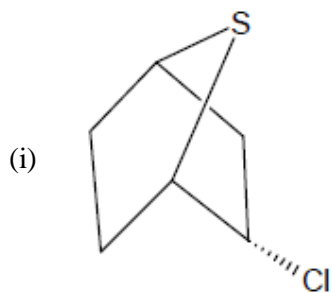
19. Which of the following acids is a vitamin?  
 (1) Aspartic acid (2) Ascorbic acid (3) Adipic acid (4) Saccharic acid
20. What could be the product(s) for the following  $S_N1$  reaction?



- (1) i, ii (2) i, iii (3) iii, iv (4) ii, iii

21. Which polymer possess inter molecular hydrogen bonding forces?  
 (1) Natural rubber (2) Teflon (3) Nylon-6,6 (4) Poly styrene

22. Identify the correct rate of hydrolysis



(1) i > ii > iii

(2) ii > iii > i

(3) i > iii > ii

(4) iii > I > ii

23. Which of the following is a biodegradable polymer?

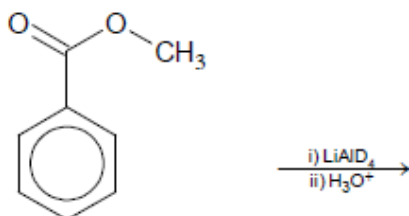
(1) Polythene

(2) Bakelite

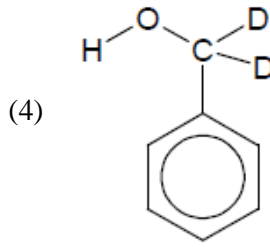
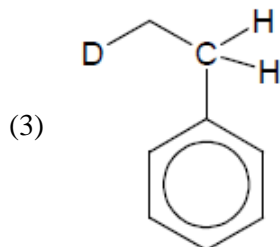
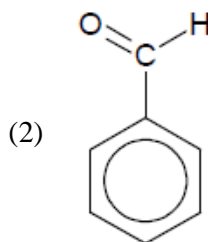
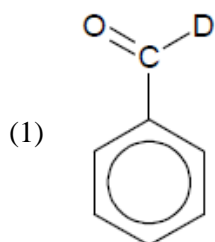
(3) PHBV

(4) PVC

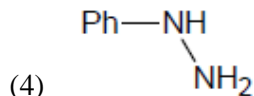
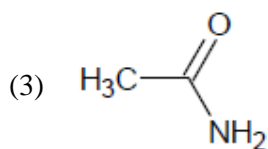
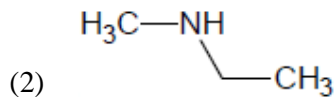
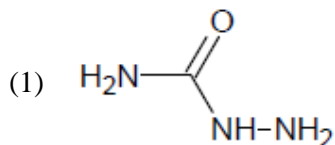
24.



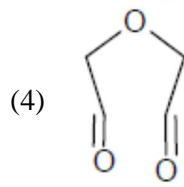
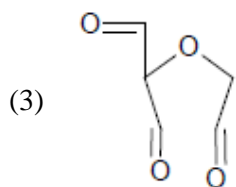
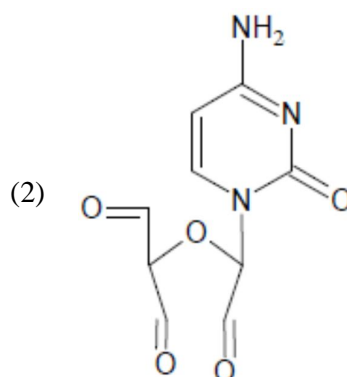
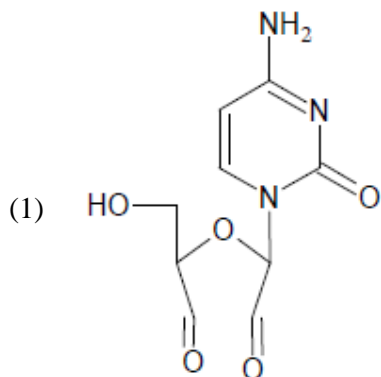
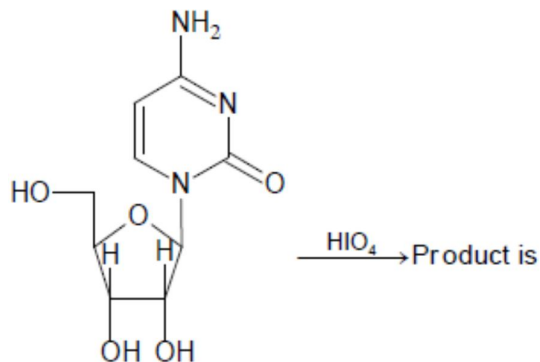
Choose the major product of the following reaction?



25. Which will react with carbonyl compound to form the corresponding hydrazone derivative at pH = 4.8?



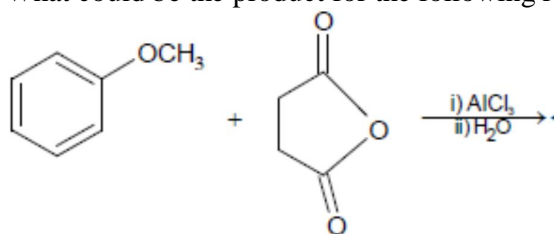
26.

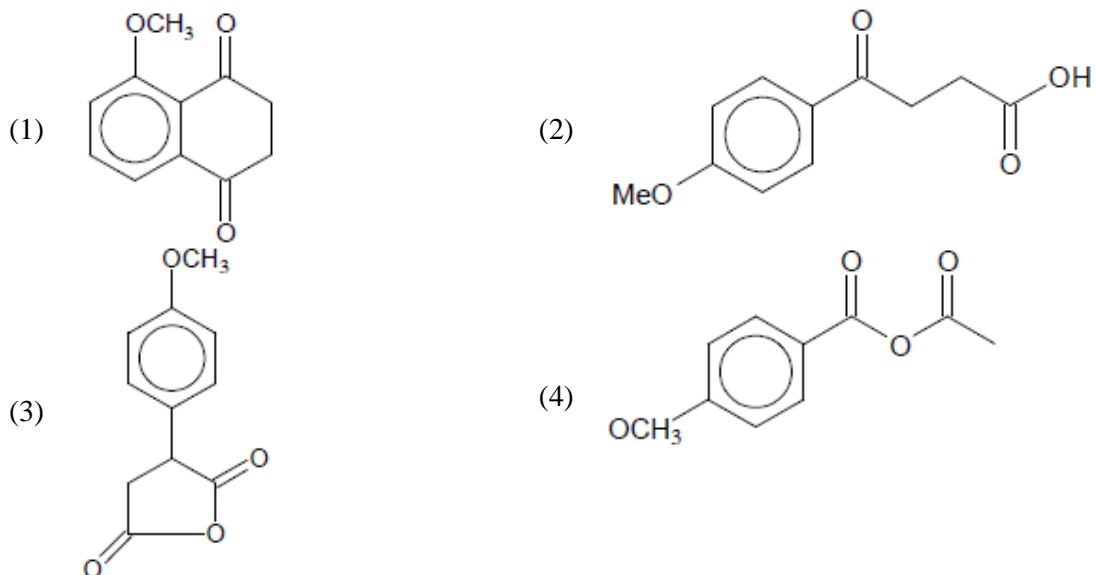


27. Which of the following compounds can't form an addition product with saturated aqueous solution of sodium bisulphate?

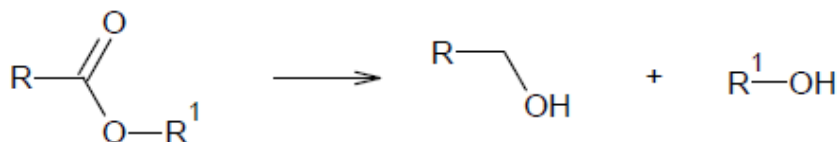
- (1) Formaldehyde      (2) Acetaldehyde      (3) Acetone      (4) Acetophenone

28. What could be the product for the following reaction?





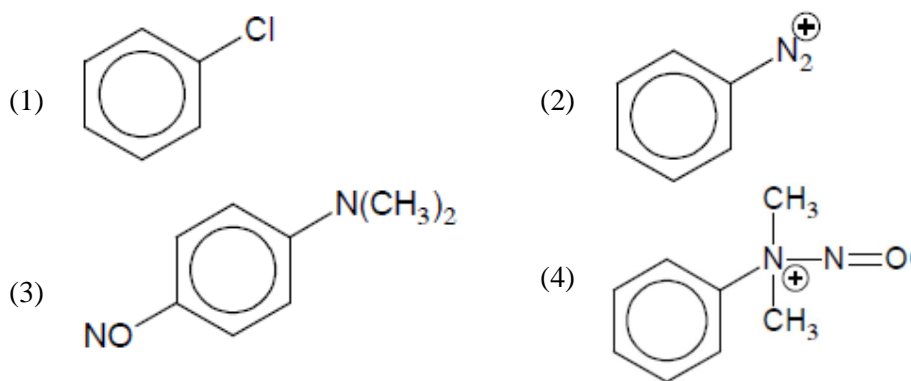
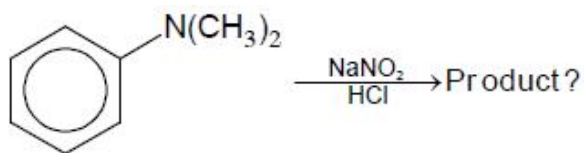
29.



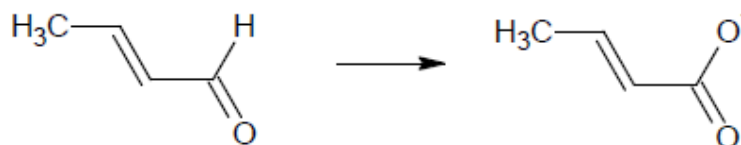
, is achieved by

- (1) DIBAL-H at  $-78^\circ\text{C}$                       (2)  $\text{H}_2/\text{Pd}-\text{BaSO}_4$ , Quinoline  
 (3)  $\text{NaBH}_4$                                         (4)  $\text{Na}/\text{EtOH}$

30.

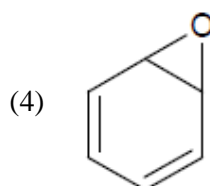
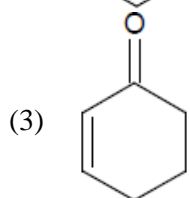
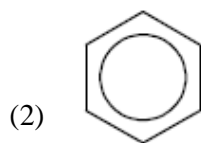
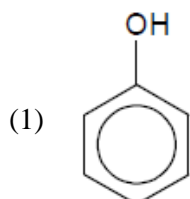
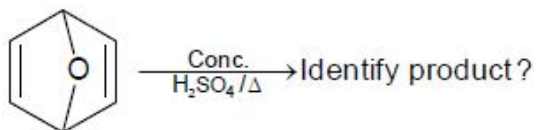


31. Best reagent used for the following conversion is :

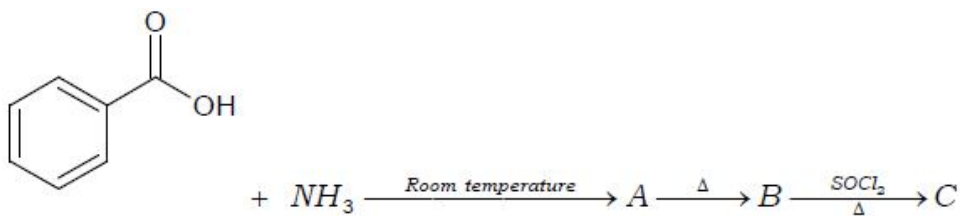


- (1)  $\text{PCC}/\text{CH}_2\text{Cl}_2$     (2)  $\text{K}_2\text{Cr}_2\text{O}_7/\text{H}_2\text{SO}_4$     (3)  $\text{I}_2/\text{NaOH}$                       (4) Tollen's reagent

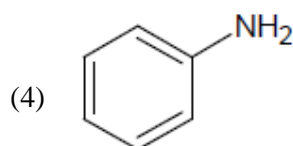
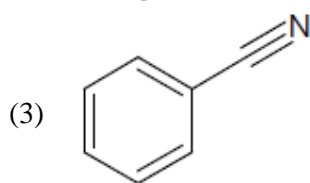
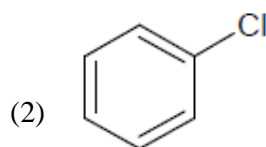
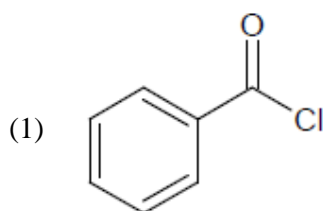
32.



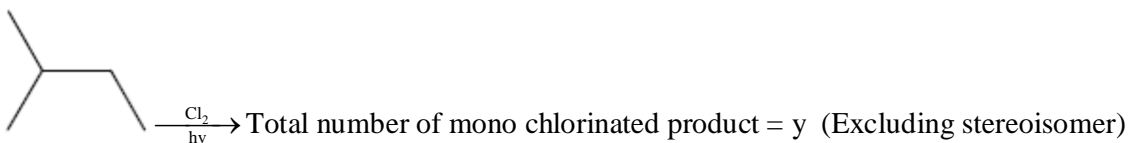
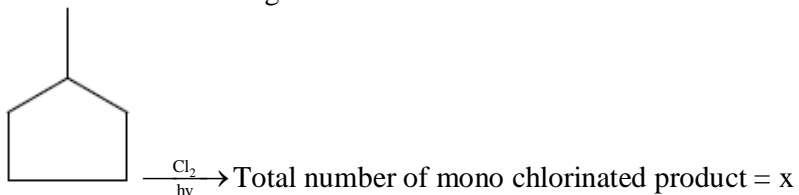
33.



The end product 'C' is :



34. Consider the following reaction:



Identify value of x + y ?

(1) 13

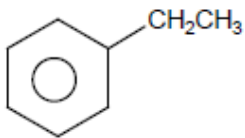
(2) 14

(3) 12

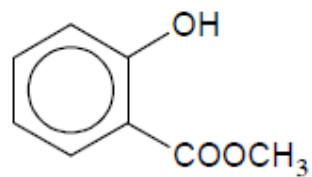
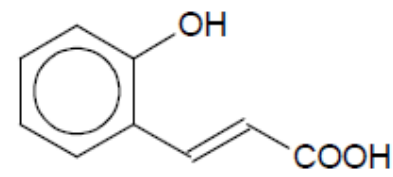
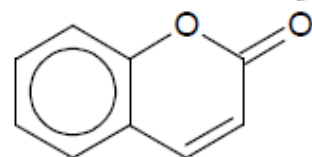
(4) 16



35. Which of the following methods is useful to prepare  $C_6H_5CH_2COOH$  ?

- (1) Oxidation of  with  $KMnO_4$
- (2)  $C_6H_5CH_2OH \xrightarrow{PCl_5} \xrightarrow[\text{ether}]{Mg} \xrightarrow[(ii) H^+/H_2O]{(i) CO_2} \rightarrow$
- (3)  $C_6H_5CH_2Cl \xrightarrow{AgCN} \xrightarrow[\Delta]{H^+/H_2O} \rightarrow$
- (4)  $C_6H_5CH_2CN \xrightarrow{SnCl_2/HCl} \xrightarrow{H^+/H_2O} \rightarrow$

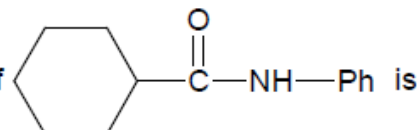
36. When o-hydroxybenzaldehyde is heated with ethanoic anhydride in the presence of sodium ethanoate, compound formed during the reaction is?

- (1) 
- (2) 
- (3) 
- (4) Both 2 and 3

37. When benzene diazonium chloride reacts with phenol at low temperature a dye is formed. The colour of dye is

- (1) yellow                      (2) orange                      (3) green                      (4) blue

38.

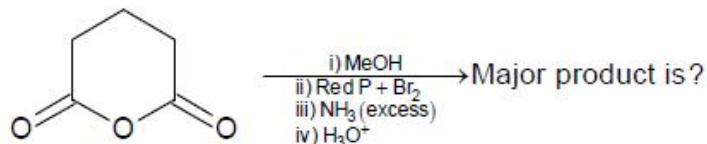
The IUPAC name of  is

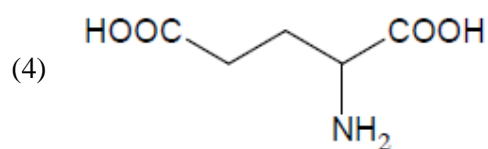
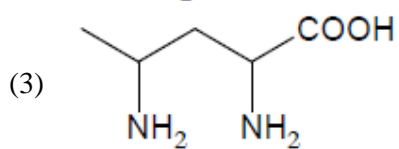
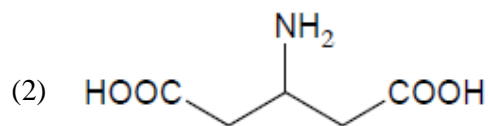
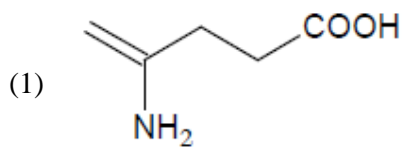
- (1) N-cyclohexylbenzene                      (2) N-Phenyl-N-cyclohexyl methanamide  
 (3) N-Phenylcyclohexanecarboxamide                      (4) N-cyclohexyl-N-phenyl methyl amide

39. Phenol and anisole can be distinguish by

- (1) Neutral  $FeCl_3$  test                      (2) 10% aqueous  $NaHCO_3$   
 (3) Anhydrous  $ZnCl_2$  and concentrated  $HCl$                       (4) All the above

40.

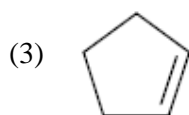
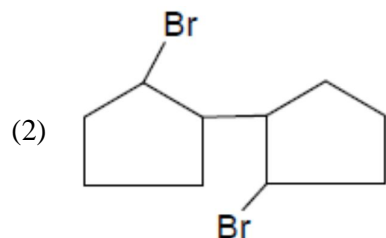
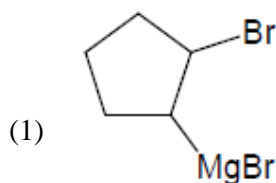
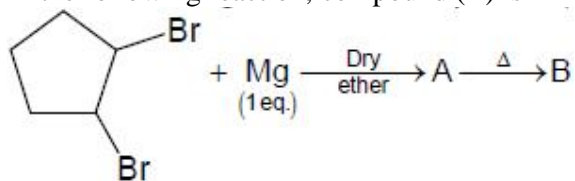




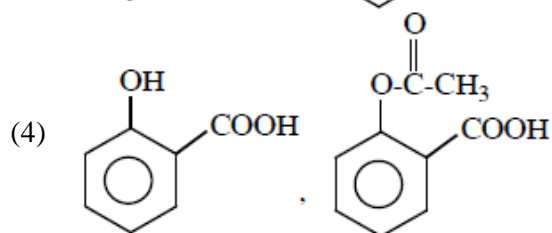
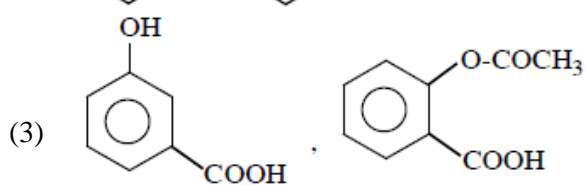
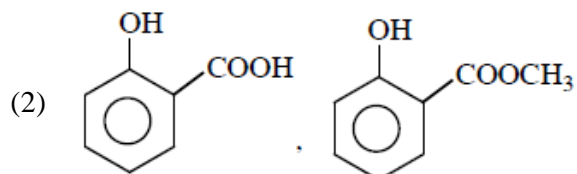
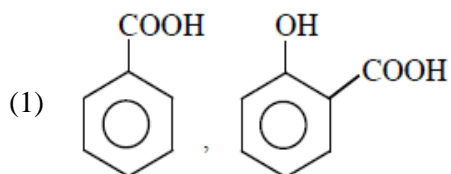
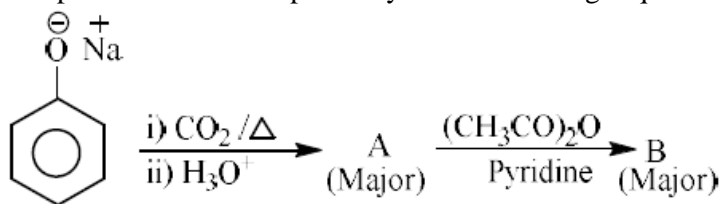
41. Electrophile in Kolb's reaction is

- (1)  $\text{CCl}_4$       (2)  $\ddot{\text{C}}\text{Cl}_2$       (3)  $\text{CO}_2$       (4)  $\text{SO}_3$

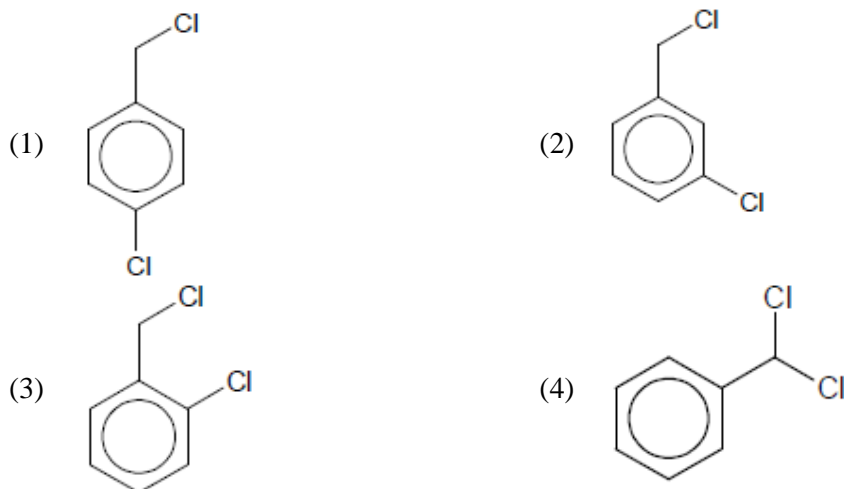
42. In the following reaction, compound (B) is



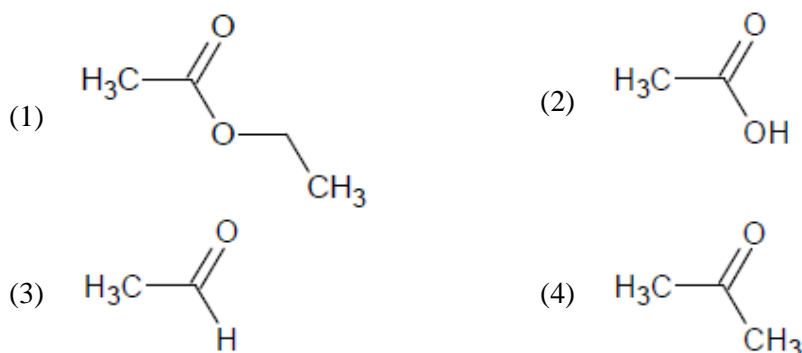
43. The products A & B respectively in the following sequence of reactions



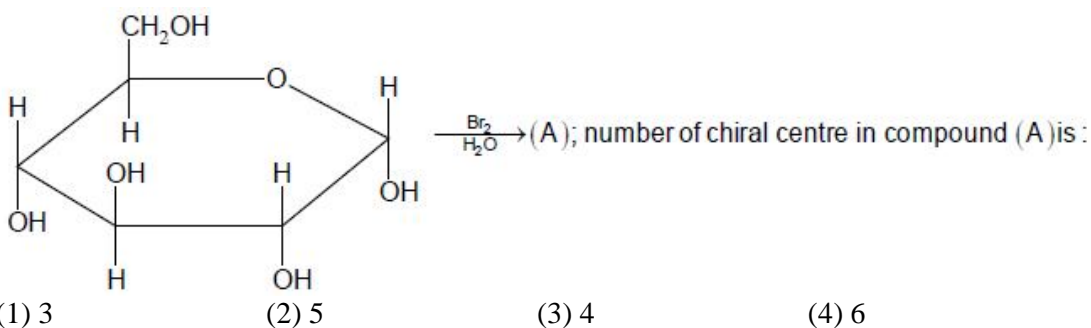
44. An aromatic compound (A),  $C_7H_6Cl_2$  gives  $AgCl$  on boiling with alcoholic  $AgNO_3$  soln. and yields  $C_7H_7OCl$  on treatment with  $NaOH$ . (A) on oxidation gives a monochlorobenzoic acid which affords only one monoderivative on nitration. The compound (A) is



45. Which of the following compound doesn't produce corresponding alcohol(s) upon reaction with  $Na/EtOH$ ?

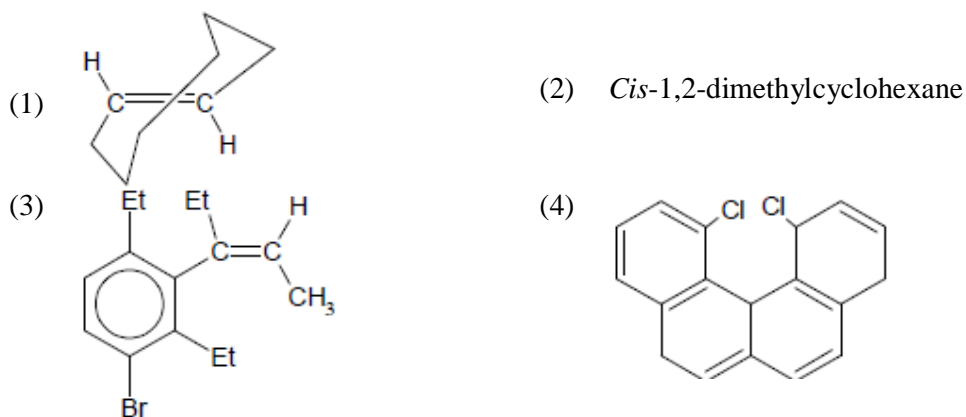


46.



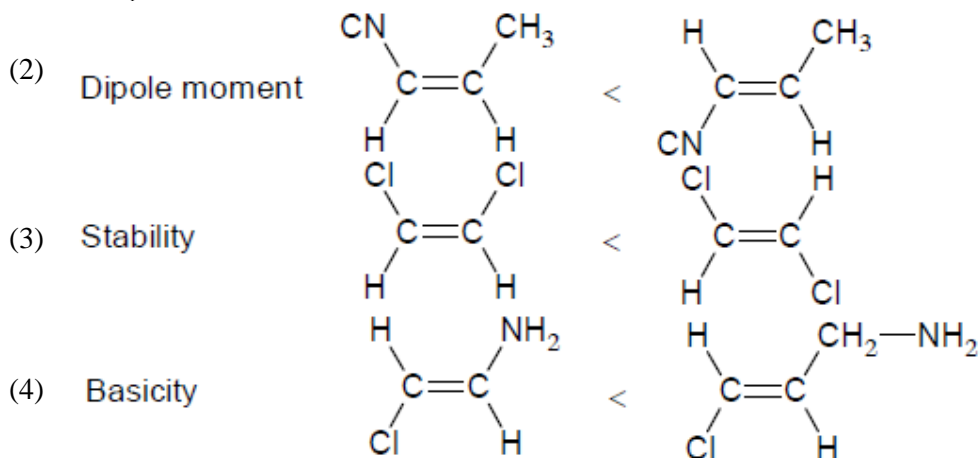
47. An unknown compound with M.F.  $C_6H_{12}O_6$  on acetylation gives acetylated product with M.wt.390. The number of hydroxyl groups in unknown compound is
- (1) 3                      (2) 4                      (3) 5                      (4) 6

48. Which of the following is an optically inactive compound?



49. Which of the following options is incorrect?

(1)  $pK_{a1}$  *cis* but-2-ene dioic acid > *Trans* but-2-ene dioic acid



50. Statement I: Ethyl chloride (or) ethyl bromide reacts with NaI in dry acetone forms ethyl iodide.  
Statement II: In acetone NaCl and NaBr are better Nucleophiles than NaI

(1) Statement-I is True, Statement-II is True; Statement-II is a correct Explanation for Statement-I  
(2) Statement-I is True, Statement-II is True; Statement-II is NOT a correct explanation for Statement-I

(3) Statement-I is True, Statement-II is False

(4) Statement-I is False, Statement-II is True

51. An optically active compound (A) has the molecular formula  $C_6H_{10}$ . The compound gives a ppt. when treated with  $Ag(NH_3)_2OH$ . On catalytic hydrogenation, A yields B( $C_6H_{14}$ ) which is only optically inactive. Identify the total number of  $\alpha$  H in product formed by treatment of A with  $O_3/H_2O_2$  then LAH and then  $H^+/\Delta$ .

(1) 7

(2) 6

(3) 8

(4) 9

52. A solution of (+)-1-chloro-1-phenyl ethane in toluene racemises slowly in the presence of small amount of  $SbCl_5$ , due to formation of

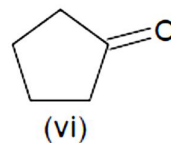
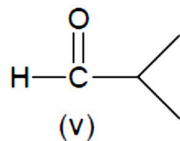
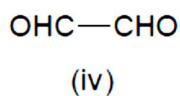
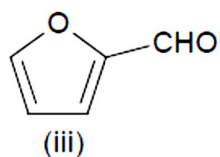
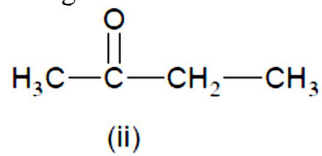
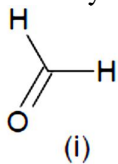
(1) Carbanion

(2) Carbene

(3) Carbocation

(4) free radical

53. How many compounds will give Cannizzaro reaction?



(1) 2

(2) 3

(3) 4

(4) 5

54. Which of the following reagent cannot be used to prepare alkylchloride from an alcohol?

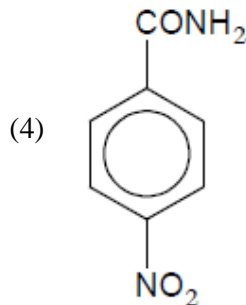
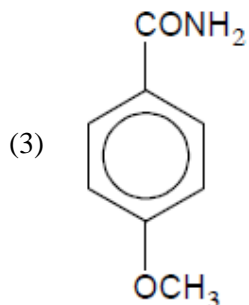
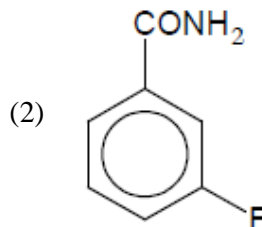
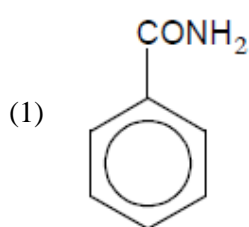
(1) anhy.  $\text{ZnCl}_2 + \text{conc. HCl}$

(2)  $\text{SOCl}_2$

(3) aq.  $\text{NaCl}$

(4)  $\text{PCl}_5$

55. Which of the following can undergo Hofmann Bromamide reaction most easily?



56. Which is an ambident nucleophile?

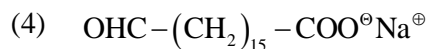
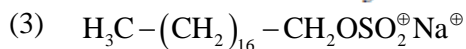
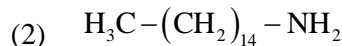
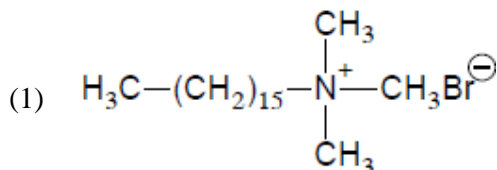
(1)  $\text{NH}_2 - \text{NH}_2$

(2)  $\text{CO}_3^{2-}$

(3)  $\text{CH}_3\text{COO}^-$

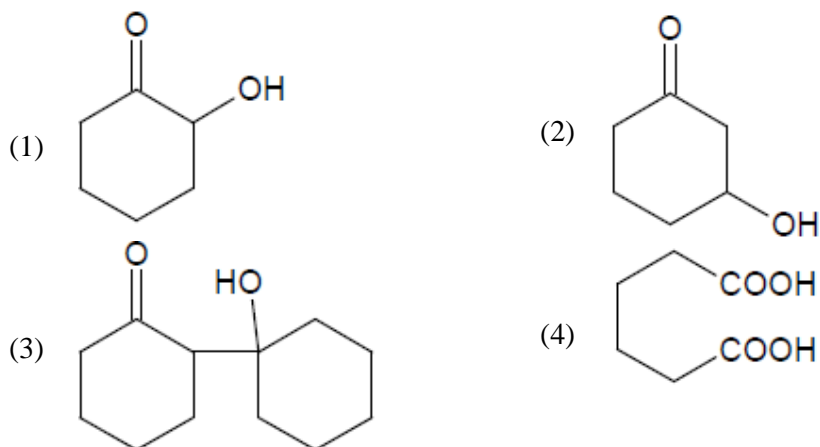
(4)  $\text{SO}_3^{2-}$

57. Which of the following is not a surfactant?



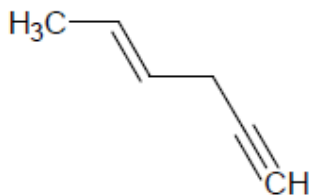
58. Which of the following has the highest boiling point?  
 (1) n- Butyl alcohol (2) Isobutyl alcohol  
 (3) Sec.butyl alcohol (4) Ter.butyl alcohol

59. When cyclohexanone is treated with  $\text{Na}_2\text{CO}_3$  soln, we get



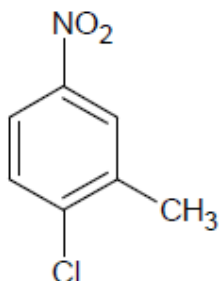
60. The IUPAC name for methyl acetate is:  
 (1) Ethyl methanoate (2) Ethyl ethanoate  
 (3) Methyl ethanoate (4) Methyl methanoate

61. The IUPAC name for



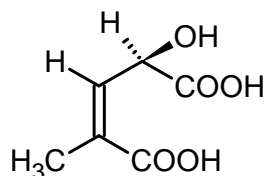
- (1) hex - 4 - ene - 1 - yne (2) hex - 2 - ene - 5 - yne  
 (3) hex - 4 - en - 1 - yne (4) hex - 2 - en - 5 - yne

62. The IUPAC name for



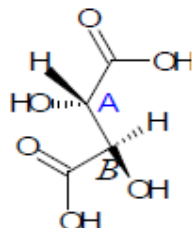
- (1) 4 - chloro - 3 - methyl - 1 - nitrobenzene  
 (2) 4 - chloro - 1 - nitro - 3 - methylbenzene  
 (3) 1 - chloro - 2 - methyl - 4 - nitrobenzene  
 (4) 1 - chloro - 4 - nitro - 2 - methylbenzene

63. Find the number of asymmetric atoms and stereogenic atoms present in the following molecule are respectively



- (1) 1,1                      (2) 1, 2                      (3) 1, 3                      (4) 1, 4

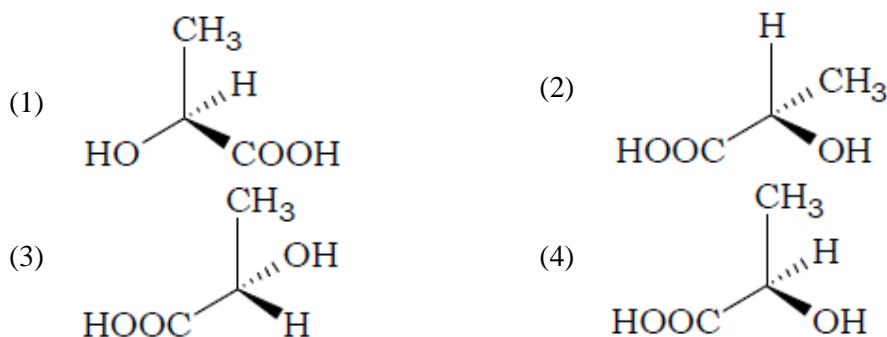
64. The absolute configuration of A) and B) are



respectively:

- (1) R,R                      (2) S,S                      (3) R,S                      (4) S,R

65. D-Lactic acid among the following is:



66. Incorrect statement is

- (1) 1,2-dichloroethane is more stable in anti conformer  
 (2) 1,2-dihydroxyethane is more stable in gauche conformer  
 (3) 1-hydroxy-2-chloroethane is more stable in anti conformer  
 (4) anti conformer of 1,2-dichlorobutane possess inversion center

67. Identify the *correct* statement from the following with regard to Lassaigne's Test,

- (1) violet coloration during the detection of sulphur is due to the formation of ferric ferrocyanide  
 (2) Blue coloration during the detection of nitrogen is due to the formation of ferric thiocyanate  
 (3) If both nitrogen and sulphur are present, the formed NaSCN decomposes into Na<sub>2</sub>S and NaCN, in case when excess sodium is used.  
 (4) Red blood coloration is due to the formation of Na<sub>4</sub>[Fe(CN)<sub>5</sub>NOS]

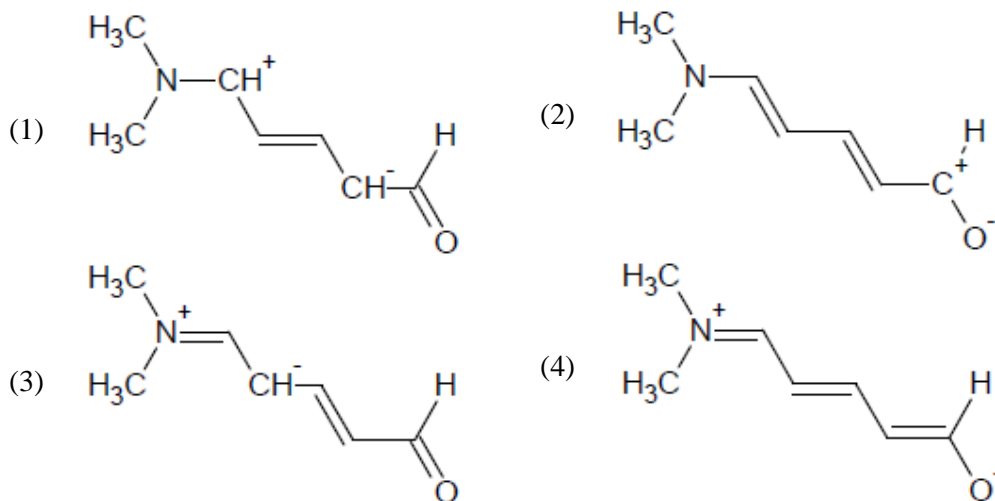
68. Which one of the following is correct regarding paper chromatography?

- (1) mobile phase is liquid and stationary phase is solid  
 (2) both phases are liquids  
 (3) both phases are solids  
 (4) mobile phase is gas and stationary phase is liquid

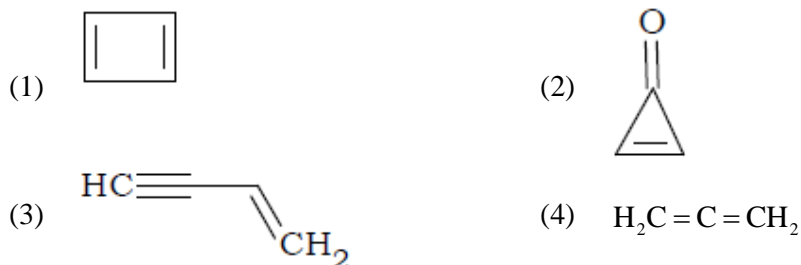
69. Kjeldahl's method cannot be used for the estimation of nitrogen in

- (1) C<sub>6</sub>H<sub>5</sub>-NH<sub>2</sub>              (2) CH<sub>3</sub>-NH<sub>2</sub>              (3) C<sub>6</sub>H<sub>5</sub>-NO<sub>2</sub>              (4) CH<sub>3</sub>-NH-CH<sub>3</sub>

70. Which binary mixture can be separated into individual compounds, by using  $\text{NaOH}_{(\text{aq})}$  solution?  
 (1)  $\text{C}_6\text{H}_5\text{OH}$  and  $\text{C}_6\text{H}_5\text{COOH}$  (2)  $\text{C}_6\text{H}_5\text{COOH}$  and  $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$   
 (3)  $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$  and  $\text{C}_2\text{H}_5\text{OH}$  (4)  $\text{CH}_3\text{OCH}_3$  and  $\text{C}_2\text{H}_5\text{OH}$
71. Correct order of basic strength of the following molecules/ions is:  
 (1)  $\overset{\ominus}{\text{N}}\text{H}_2 > \overset{\ominus}{\text{O}}\text{H} > \text{NH}_3 > \text{F}^{\ominus} > \text{H}_2\text{O}$  (2)  $\overset{\ominus}{\text{N}}\text{H}_2 > \overset{\ominus}{\text{O}}\text{H} > \text{NH}_3 > \text{H}_2\text{O} > \text{F}^{\ominus}$   
 (3)  $\overset{\ominus}{\text{N}}\text{H}_2 > \text{NH}_3 > \overset{\ominus}{\text{O}}\text{H} > \text{H}_2\text{O} > \text{F}^{\ominus}$  (4)  $\overset{\ominus}{\text{N}}\text{H}_2 > \overset{\ominus}{\text{O}}\text{H} > \text{F}^{\ominus} > \text{NH}_3 > \text{H}_2\text{O}$
72. Which of the following overlap is responsible for the higher stability of trimethyl carbocation over tertbutyl carbocation?  
 (1)  $\sigma \rightarrow \pi$  (2)  $n \rightarrow \sigma$  (3)  $\sigma \rightarrow \pi$  (4)  $\sigma \rightarrow p$  (empty)
73. The most stable resonating structure is;



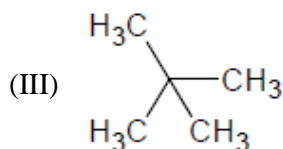
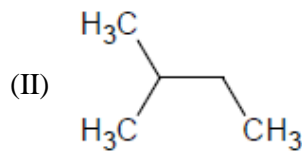
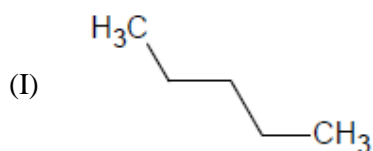
74. The compound having the highest dipole moment among the following is



75.  $\text{Al}_4\text{C}_3$ ,  $\text{Mg}_2\text{C}_3$  and  $\text{CaC}_2$  are separately treated with water. The organic products formed, respectively, are  
 (1) methane, propyne and ethyne (2) propyne, methane, and ethyne  
 (3) methane, methane and ethyne (4) propyne, propyne, and ethyne



76. Arrange the following alkanes in increasing order of their heats of combustion.



- (1) II < III < I      (2) I < III < II      (3) I < II < III      (4) III < II < I

77. Which on photochemical monochlorination gives at least one enantiomeric pair?

- (1) Isopentane(2-methyl butane)      (2) Isobutene(2-methyl propane)  
 (3) n-Propane      (4) Neopentane(2,2-dimethyl propane)

78. An optically active hydrocarbon (A) with molecular formula  $C_6H_{12}$  gives optically inactive compound (B) on catalytic hydrogenation. The compound (A) is:

- (1) 4-methylpent-2-ene      (2) 1-methylpent-2-ene  
 (3) 3-methylpent-1-ene      (4) 2-ethylbut-1-ene

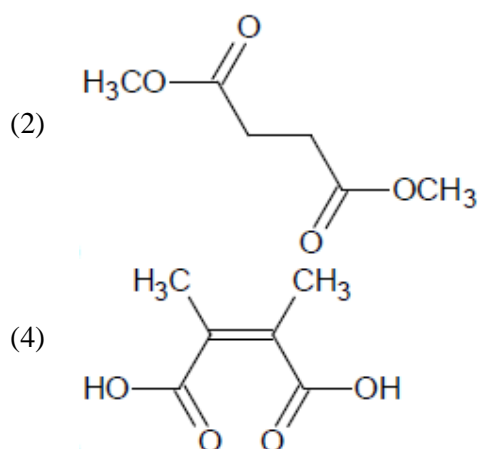
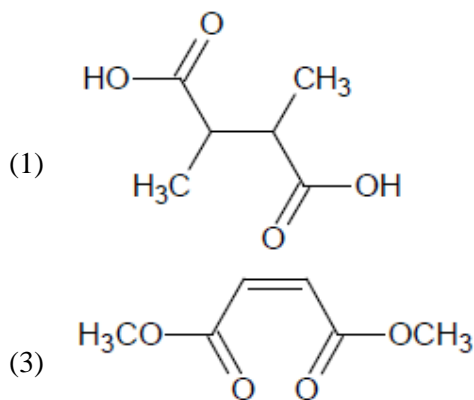
79. Which alkyl halide(s) gives more than one alkene (excluding stereo isomers) on reaction with EtOK?

- (1) 2-bromo-2-methylpentane      (2) 1-bromo-2-methylpentane  
 (3) 3-bromo-3-ethylpentane      (4) 3-bromo-2,2-dimethylpentane

80. Which compound on ozonolysis produces 2-methyl pentane-1,5-dial

- (1) 1-methyl cyclopentene      (2) 1-methyl cyclopent-2-ene  
 (3) 2-methyl cyclopentene      (4) 3-methyl cyclopentene

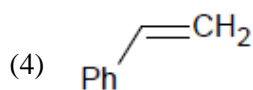
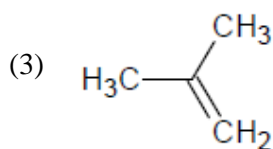
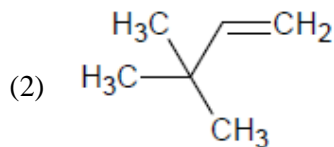
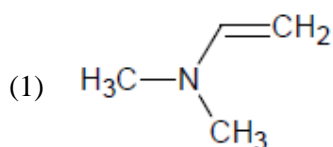
81. Which compound on kolbe's electrolysis produce but-2-yne at anode?



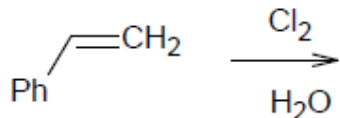
82. Which is added to propene by free radical mechanism in presence of organic peroxide

- (1) HCl      (2) HBr      (3) HI      (4) Both HCl and HBr

83. Which is most reactive towards addition of HBr?



84. The correct statement about the following reaction is

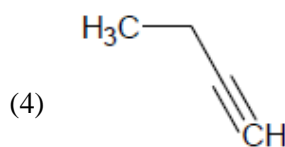
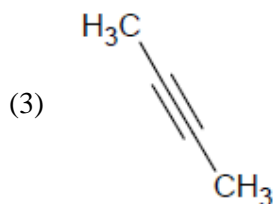
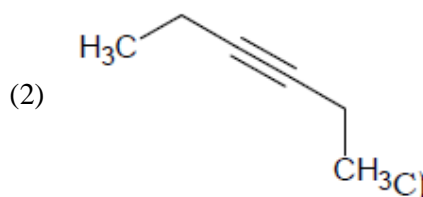
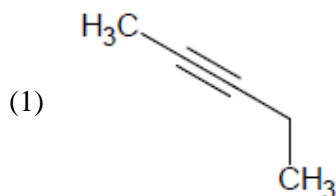


- (1) Markovnikov's product (Chlorohydrine) is major
- (2) Anti-Markovnikov's product (Chlorohydrine) is major
- (3) Vic-dihalide is major
- (4) Vic-diol is major

85. Hydroboration of alkene proceed through

- (1) Cyclic threemembered ring transition state
- (2) Cyclic fourmembered ring transition state
- (3) Cyclic fivemembered ring transition state
- (4) Cyclic sixmembered ring transition state

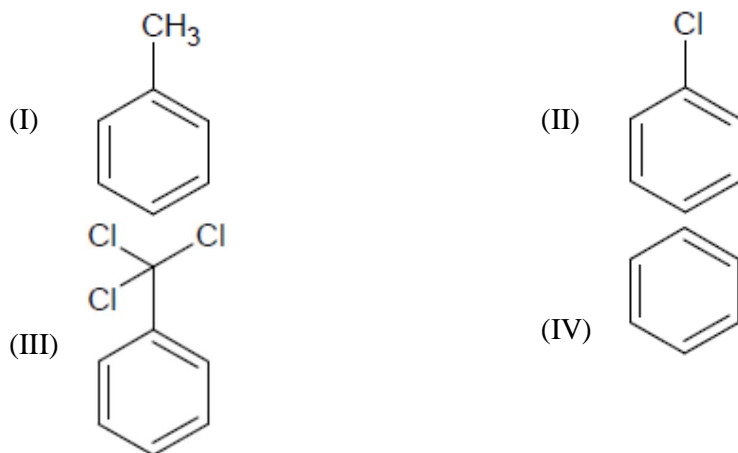
86. Which compound does not reduced to corresponding alkene by means of Na / liq.NH<sub>3</sub>?



87. Which gives terminal alkyne?

- (1)  $\text{Na}^+\text{C}\equiv\text{C}^-\text{Na}^+$  reacts with excess of  $\text{CH}_3\text{I}$
- (2)  $\text{CH}_3-\text{CCl}_3$  is heated in the presence of Ag powder
- (3)  $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CHCl}_2$  is heated with excess of fuming KOH
- (4)  $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CHCl}_2$  is heated with 2 eq of  $\text{NaNH}_2$

88. Reactivity order of the following compounds towards EAS reaction is;



- (1) I > II > IV > III    (2) I > IV > II > III    (3) II > I > IV > III    (4) II > IV > I > III

89. Which one is the best solvent for FRIEDEL-CRAFTS reaction?

- (1) Chloro benzene    (2) Toluene    (3) p-Xylene    (4) Nitro benzene

90. Reaction (I):  $C_6H_6 + 6Cl_2 \xrightarrow[\text{Dark}]{\text{Anhy. AlCl}_3} C_6Cl_6$

Reaction (II):  $C_6H_6 + 3Cl_2 \xrightarrow[500K]{UV} C_6H_6Cl_6$

The above reactions are examples for;

- (1) I is Electrophilic addition & II is Freeradical addition  
(2) I is Electrophilic substitution & II is Freeradical substitution  
(3) I is Electrophilic substitution & II is Freeradical addition  
(4) I is Electrophilic addition & II is Freeradical substitution

# PACE-IIT & MEDICAL

ANDHERI / BORIVALI / DADAR / CHEMBUR / THANE / MULUND/NERUL / POWAI

IIT – JEE - 2019

TW TEST (3 Yrs.)

TOPIC: FULL ORGANIC

DATE:13/10/18

## ANSWER KEY

1.	(2)	2.	(4)	3.	(3)	4.	(2)	5.	(2)	6.	(3)	7.	(2)
8.	(3)	9.	(2)	10.	(1)	11.	(4)	12.	(3)	13.	(4)	14.	(1)
15.	(3)	16.	(3)	17.	(4)	18.	(3)	19.	(2)	20.	(1)	21.	(3)
22.	(1)	23.	(3)	24.	(4)	25.	(4)	26.	(1)	27.	(4)	28.	(2)
29.	(4)	30.	(3)	31.	(4)	32.	(1)	33.	(3)	34.	(2)	35.	(2)
36.	(4)	37.	(2)	38.	(3)	39.	(1)	40.	(4)	41.	(3)	42.	(3)
43.	(4)	44.	(1)	45.	(2)	46.	(3)	47.	(3)	48.	(2)	49.	(3)
50.	(3)	51.	(4)	52.	(3)	53.	(3)	54.	(3)	55.	(3)	56.	(4)
57.	(2)	58.	(1)	59.	(3)	60.	(3)	61.	(3)	62.	(3)	63.	(3)
64.	(4)	65.	(4)	66.	(3)	67.	(3)	68.	(2)	69.	(3)	70.	(2)
71.	(1)	72.	(4)	73.	(4)	74.	(2)	75.	(1)	76.	(4)	77.	(1)
78.	(3)	79.	(1)	80.	(4)	81.	(4)	82.	(2)	83.	(1)	84.	(1)
85.	(2)	86.	(4)	87.	(4)	88.	(2)	89.	(4)	90.	(3)		