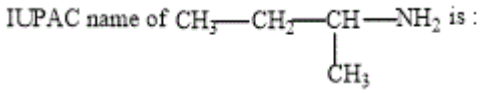
Basic Concept of Chemistry

1. Basic Concept of Chemistry

Q1. IUPAC name of  is :

(A) 1-methyl-1-aminopropane

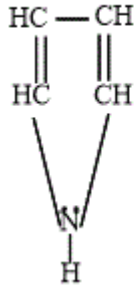
(B) 2-aminobutane

(C) 2-methyl-3-aminopropane

(D) None of the above

Correct Answer: **(B)** Level: **Easy** Tagging:

Q2. How many π-electrons are there in following?



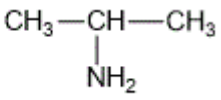
(A) 2

(B) 4

(C) 6

(D) 8

Correct Answer: **(C)** Level: **Easy** Tagging:

Q3. IUPAC name of  is

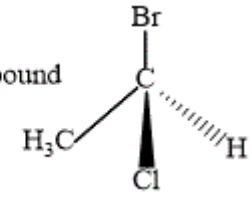
(A) Dimethyl amine

(B) 2-amino propane

(C) Isopropylamine

(D) 2-propanamine

Correct Answer: **(D)** Level: **Easy** Tagging:

Q4. The chirality of the compound 

(A) R

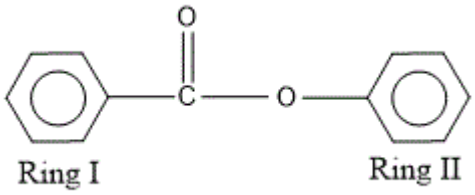
(B) S

(C) Z

(D) I

Correct Answer: **(A)** Level: **Easy** Tagging:

Q5. In the compound



electrophilic substitution occurs at

(A) ortho/para position at ring I

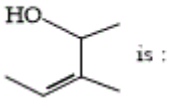
(B) meta position at ring I

(C) ortho/para position at ring II

(D) meta position at ring II

Correct Answer: **(C)** Level: **Easy** Tagging:

Q6. The IUPAC name of the compound,



is :

(A) 1,2-dimethyl-2-butenol

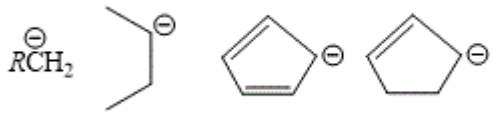
(B) 3-methylpent-3-en-2-ol

(C) 3,4-dimethyl-2-buten-4-ol

(D) 2,3-dimethyl-3-pentenol

Correct Answer: **(B)** Level: **Easy** Tagging:

Q7. The order of stability of the following carbanion is



(A) I>II>III>IV

(B) I>III>II>IV

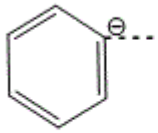
(C) IV>III>II>I

(D) III>IV>I>II

Correct Answer: **(D)** Level: **Easy** Tagging:

Q8. The stability of carbanions in the following ;

(1) $-RC=\overset{\ominus}{C}$

(2) 

(3) $R_2C=\overset{\ominus}{C}H$

(4) $R_3C-\overset{\ominus}{C}H_2$

is in the order of :

(A) (2) > (3) > (4) > (1)

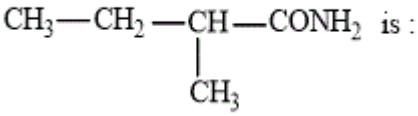
(B) (4) > (2) > (3) > (1)

(C) (1) > (3) > (2) > (4)

(D) (1) > (2) > (3) > (4)

Correct Answer: **(D)** Level: **Easy** Tagging:

Q9. The IUPAC name of the compound,



(A) 2-ethylbutanamide

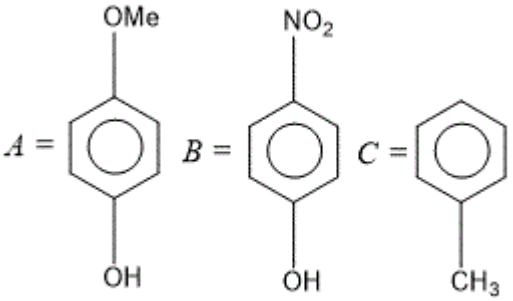
(B) 2-methylbutanamide

(C) 1-amino-2-methylpropane

(D) None of the above

Correct Answer: **(B)** Level: **Easy** Tagging:

Q10. Given,



The decreasing order of the acidic character is

(A) A>B

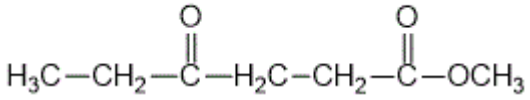
(B) B>A>C

(C) B>C>A

(D) C>B>A

Correct Answer: **(C)** Level: **Easy** Tagging:

Give the IUPAC name for,

Q11. 

(A) Ethyl-4- oxoheptanoate

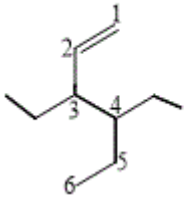
(B) Methyl-4- oxoheptanoate

(C) ethyl-4- oxohexanoate

(D) Methyl 4- oxohexanoate

Correct Answer: **(D)** Level: **Easy** Tagging:

The correct IUPAC name of the compound,

Q12.  is :

(A) 3-(1-ethyl propyl) hex-1-ene

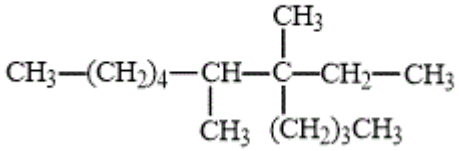
(B) 4-Ethyl-3-propyl hex-1-ene

(C) 3-Ethyl-4-ethenyl heptane

(D) 3-Ethyl-4-propyl hex-5-ene

Correct Answer: **(B)** Level: **Easy** Tagging:

The IUPAC name of the compound,

Q13.  is :

(A) 3,4-dimethyl-3-n-propylnonane

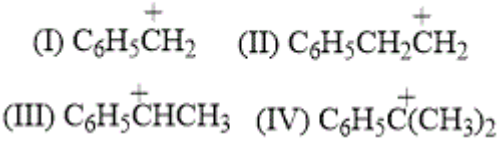
(B) 4-ethyl-4,5-dimethyldecane

(C) 6,7-dimethyl-7-n-propylnonane

(D) 6,7-dimethyl-7-ethyldecane

Correct Answer: **(B)** Level: **Easy** Tagging:

Consider the following carbocations,

Q14. 

(A) II

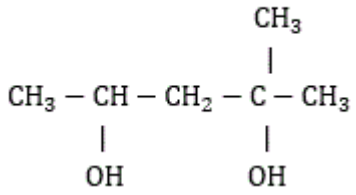
(B) II

(C) III

(D) IV

Correct Answer: **(A)** Level: **Easy** Tagging:

Q15. The IUPAC name of



(A) 1, 1-dimethyl-1, 3-butanediol

(B) 2-methyl-2, 4-pentanediol

(C) 4-methyl-2, 4-pentanediol

(D) l, 3, 3-trimethyl-1, 3-propane diol

Correct Answer: **(B)** Level: **Easy** Tagging:

Q16. How many structural formulae are possible for $C_5H_{11}Cl$?

(A) 6

(B) 8

(C) 10

(D) 12

Correct Answer: **(B)** Level: **Easy** Tagging:

Q17. Among the following anions
(a) $\overline{C}H_3$ (b) $\overline{N}H_2$, (c)OH^-, (d)F^-
the order of basicity is :

(A) a>b>c>d

(B) b>a>c>d

(C) c>b>a>d

(D) c>a>b>d

Correct Answer: **(A)** Level: **Easy** Tagging:

Q18. In the following groups,
$\underset{I}{-OAC}\ \underset{II}{-OMe}\ \underset{III}{-OSO_2Me}\ \underset{IV}{-OSO_2CF_3}$
the order of leaving group ability is :

(A) I > II > III > IV

(B) IV > III > I > II

(C) III > II > I > IV

(D) II > III > IV > I

Correct Answer: **(B)** Level: **Easy** Tagging:

In cannizzaro reaction given below

$$2PhCHO \xrightarrow{OH^{\ominus}} PhCH_2OH + PhCO_2^{\ominus}$$

Q19. The slowest step is

(A) The attack of $::OH^{\ominus}$ at the carboxyl group

(B) The transfer of hydride to the carbonyl group

(C) The abstraction of proton from the carboxylic group

(D) The deprotonation of $PhCH_2$ OH

Correct Answer: **(B)** Level: **Easy** Tagging:

In the hydrocarbon

$$\overset{6}{CH_3}-\overset{5}{CH}=\overset{4}{CH}-\overset{3}{CH_2}-\overset{2}{C}\equiv\overset{1}{CH}$$

Q20. The state of hybridization of carbons 1, 3 and 5 are in the following sequence :

(A) sp, sp^3, sp^2

(B) sp, sp^2, sp^3

(C) sp^3, sp^2, sp

(D) sp^2, sp, sp^3

Correct Answer: **(A)** Level: **Easy** Tagging:

Stability order of... is in order

$$\underset{(I)}{C_6H_5-\overset{+}{C}H_2}, \quad \underset{(II)}{CH_2=CH-\overset{+}{C}H_2}, \quad \underset{(III)}{(CH_3)_3C^+}, \underset{(IV)}{CH_2=\overset{+}{C}H}$$

Q21.

(A) IV

(B) IV

(C) I

(D) IV

Correct Answer: **(A)** Level: **Easy** Tagging:

Relative stabilities of the following carbocations will be in the order

$$\underset{A}{\overset{\oplus}{C}H_3} \quad \underset{B}{CH_3\overset{\oplus}{C}H_2} \quad \underset{C}{\overset{\oplus}{C}H_2OCH_3}$$

Q22.

(A) C>B>A

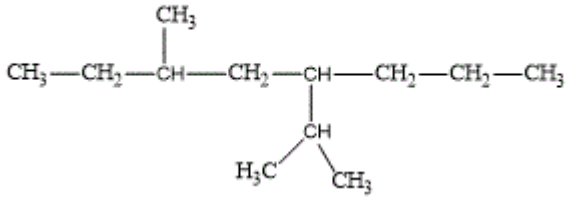
(B) C

(C) B>C>A

(D) C>A>B

Correct Answer: **(A)** Level: **Easy** Tagging:

Q23. IUPAC name of the compound



(A) 4-isoprophyl, 6-methyl octane

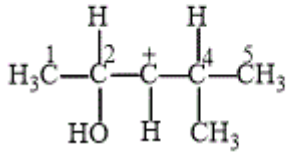
(B) 3-methyl, 5-(1-methylethyl) octane

(C) 3-methyl, 5-isopropyl octane

(D) 6-methyl, 4-(1-methylethyl) octane

Correct Answer: **(B)** Level: **Easy** Tagging:

Q24. In the following carbocation, H/CH_3 that is most likely to migrate to the positively charged carbon is :



(A) CH_3 at C–4

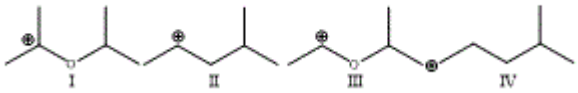
(B) H at C–4

(C) CH_3 at C–2

(D) H at C–2

Correct Answer: **(D)** Level: **Easy** Tagging:

Q25. The correct stability order for the following species as



(A) II>IV>I>III

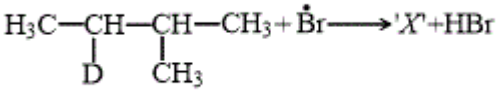
(B) I>II>III>IV

(C) II>I>IV>III

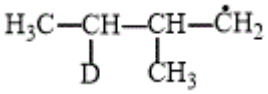
(D) I>III>II>IV

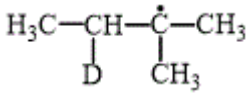
Correct Answer: **(D)** Level: **Easy** Tagging:

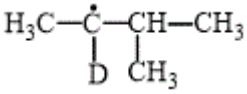
Q26. Consider the following reaction,

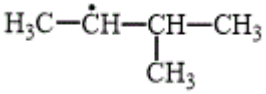


Identify the structure of the major product 'X' :

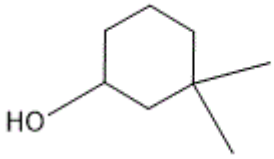
(A) 

(B) 

(C) 

(D) 

Correct Answer: **(B)** Level: **Easy** Tagging:

Q27. The IUPAC name of the compound 

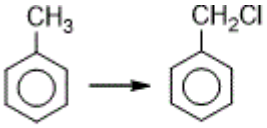
(A) 3, 3-dimethyl-1-hydroxy cyclohexane

(B) 1, 1-dimethyl-3- hydroxy cyclohexane

(C) 3, 3- dimethy-1- cyclohexanol

(D) 1,1-dimethyl-3-cyclohexanol

Correct Answer: **(C)** Level: **Easy** Tagging:

Q28.  The above reaction proceeds through

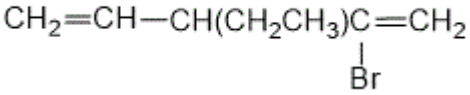
(A) Free radicals substitution

(B) Nucleophilic substitution

(C) Electrophilic substitution

(D) None of the above

Correct Answer: **(A)** Level: **Easy** Tagging:

Q29. IUPAC name of 

(A) 4-bromo-3-ethyl-1,4-pentadiene

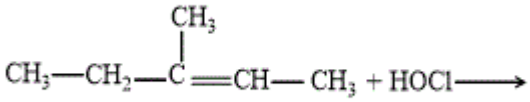
(B) 2-bromo-3-ethyl-1,4pentadiene

(C) 2-bromo-3-ethyl-1-5-pentadiene

(D) None of the above

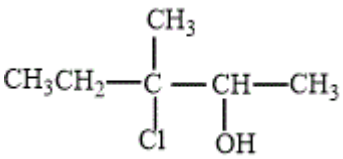
Correct Answer: **(B)** Level: **Easy** Tagging:

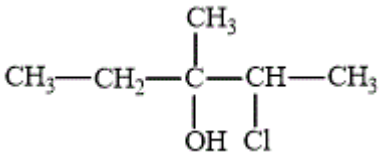
The product of reaction,

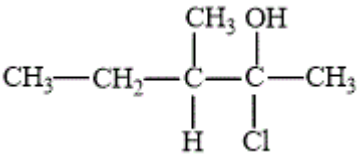


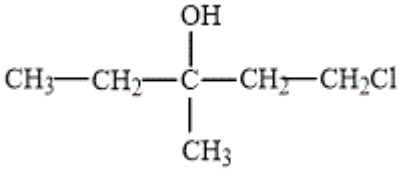
product is :

Q30.

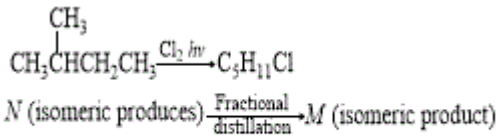
(A) 

(B) 

(C) 

(D) 

Correct Answer: **(B)** Level: **Easy** Tagging:



Q31. what are the no. of N and M?

(A) 6, 6

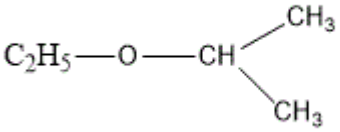
(B) 6, 4

(C) 4, 4

(D) 3, 3

Correct Answer: **(B)** Level: **Easy** Tagging:

The IUPAC name of $C_2H_5 - o - CH$



is

Q32.

(A) Ethoxy propane

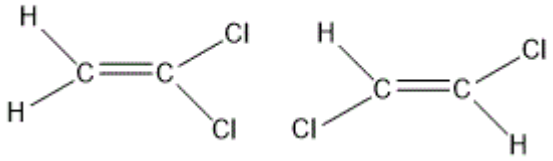
(B) 1, 1-dimethyl ether

(C) 2-ethoxy iso-propane

(D) 2-ethoxy propane

Correct Answer: **(D)** Level: **Easy** Tagging:

Q33. The following compound differ in



(A) Configuration

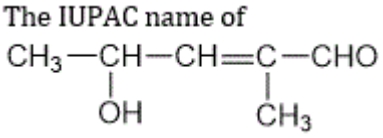
(B) Conformation

(C) Structure

(D) Chirality

Correct Answer: **(C)** Level: **Easy** Tagging:

Q34. The IUPAC name of



(A) 4-hydroxy-1-methylpentanal

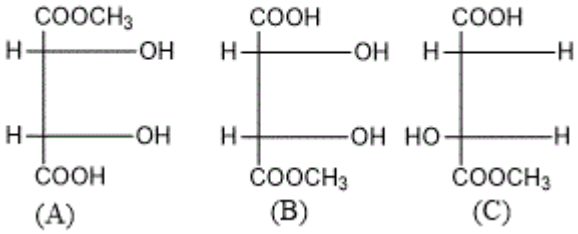
(B) 4-hydroxy-4-methylpent-2-en-1-al

(C) 2-hydroxy-4-methylpent-2-en-5-al

(D) 2-hydroxy-3-methylpent-2-en-5-al

Correct Answer: **(B)** Level: **Easy** Tagging:

Q35. The correct statement about the compounds (A), (B) and (C) is



(A) (A) and (B) are identical

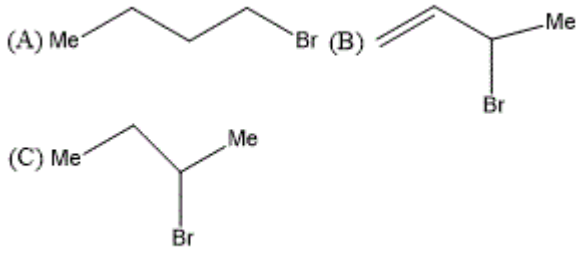
(B) (A) and (B) are diastereomers

(C) (A) and (C) are enantiomers

(D) (A) and(B) are enantiomers

Correct Answer: **(D)** Level: **Easy** Tagging:

Consider the following bromides



Q36. The correct order is S_N1 reactivity is

(A) (B)>(C)>(A)

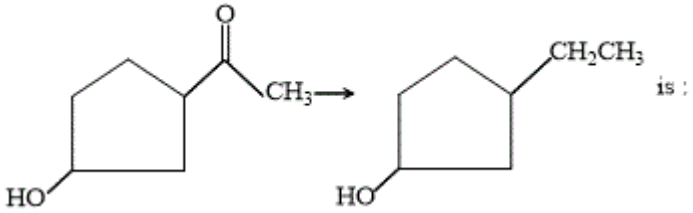
(B) (B)>(A)>(C)

(C) (C)>(B)>(A)

(D) (A)>(B)>(C)

Correct Answer: **(A)** Level: **Easy** Tagging:

The appropriate reagent for the following transformation,



is :

Q37.

(A) Zn(Hg), HCl

(B) NH_2 NH_2,OH^-

(C) H_2/Ni

(D) $NaBH_4$

Correct Answer: **(B)** Level: **Easy** Tagging:

The IUPAC name of $CH_3 - \underset{\underset{O}{\|}}{C} - \underset{\underset{CH_3}{|}}{CH} - CH_3$ is

Q38.

(A) 2-methyl-3-butanone

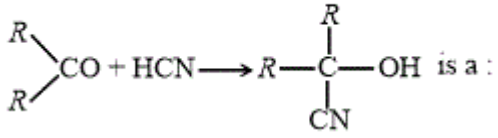
(B) 3-methyl-butan-2-one

(C) 3-methyl butanone

(D) None of these

Correct Answer: **(B)** Level: **Easy** Tagging:

Reaction,



is a :

Q39.

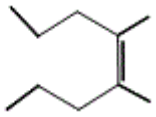
(A) Electrophilic substitution

(B) Nucleophilic substitution

(C) Electrophilic addition

(D) Nucleophilic addition

Correct Answer: **(D)** Level: **Easy** Tagging:

Q40. IUPAC name of,  is :

(A) 4,5-dimethyl oct-4-ene

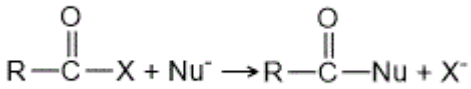
(B) 3,4-dimethyl oct-5-ene

(C) 4,5-dimethyl oct-5-ene

(D) None of the above

Correct Answer: **(A)** Level: **Easy** Tagging:

Q41. The reaction,



is fastest when X is

(A) OCOR

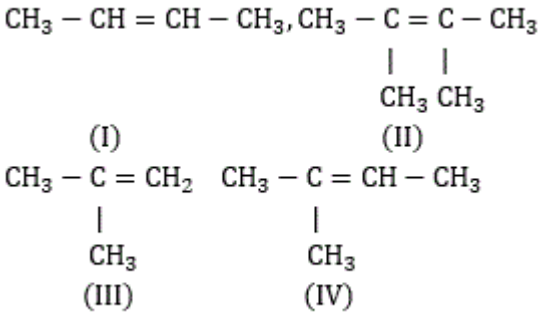
(B) OC_2H_5

(C) NH_2

(D) Cl

Correct Answer: **(D)** Level: **Easy** Tagging:

Q42. The stability of



In the increasing order is

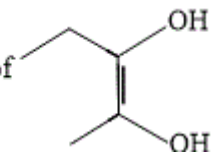
(A) III

(B) I

(C) IV

(D) II

Correct Answer: **(A)** Level: **Easy** Tagging:

Q43. IUPAC name of  is :

(A) but-2-ene-2,3-diol

(B) pent-2-ene-2,3-diol

(C) 2-methylbut-2-ene-2,3-diol

(D) Hex-2-ene-2,3-diol

Correct Answer: **(B)** Level: **Easy** Tagging:

Q44. Alkyl cyanide $R-C\equiv N$ and alkyl isocyanides $R-N\overset{=}{\rightarrow}C$ are :

(A) Tautomers

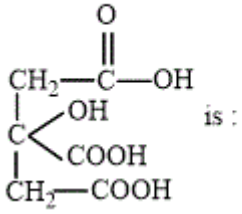
(B) Metamers

(C) Functional isomers

(D) Geometrical isomers

Correct Answer: **(C)** Level: **Easy** Tagging:

Q45. The IUPAC name of compound



is :

(A) 1,2,3-tricarboxy-2,1-propane

(B) 3-carboxy-3-hydroxy-1,5-pentanedioic acid

(C) 3-hydroxy-3-carboxy-1,5-pentanedioic acid

(D) None of the above

Correct Answer: **(B)** Level: **Easy** Tagging:

Q46. In the dehydration reaction $CH_3CONH_2 \xrightarrow{P_2O_5} CH_3C\equiv N$, the hybridization state of carbon change from

(A) lsp^3 to sp^2

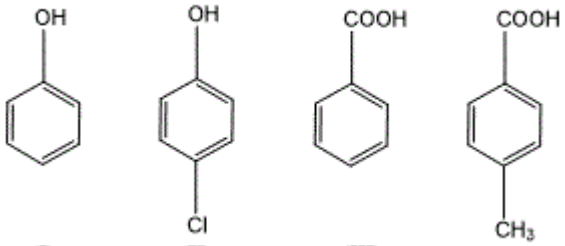
(B) lsp to sp

(C) lsp^2 to sp

(D) lsp to sp^3

Correct Answer: **(C)** Level: **Easy** Tagging:

Q47. The correct acidity order of the following is



(I) (II) (III) (IV)

(A) (III)>(IV)>(II)>(I)

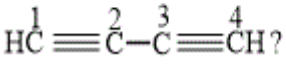
(B) (IV)>(III)>(I)>(II)

(C) (III)>(II)>(I)>(IV)

(D) (II)>(III)>(IV)>(I)

Correct Answer: **(A)** Level: **Easy** Tagging:

Q48. Which statement is correct about the hybridization of carbon atoms in,



(A) C_1 and C_4 are sp^2-hybridized

(B) C_2 and C_3 are sp^2-hybridized

(C) All are sp-hybridized

(D) All are sp^2-hybridized

Correct Answer: **(C)** Level: **Easy** Tagging:

Q49. Which of the following applies in the reaction $CH_3CHBrCH_2CH_3 \xrightarrow{\text{Alco.KOH}}$?

(I) $CH_3CH = CHCH_3$ (Major product)

(II) $CH_2 = CHCH_2CH_3$ (Minoe product)

(A) Hofmann's rule

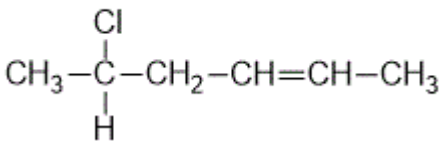
(B) Saytzeff's rule

(C) Kharasch effect

(D) Markownikoff's rule

Correct Answer: **(B)** Level: **Easy** Tagging:

Q50. The IUPAC name of



(A) 5-chloro-hex-2-ene

(B) 2-chloro-hex-5-ene

(C) l-chloro-1-methyl-pent-3-ene

(D) 5-chloro-5-methyl-pent-2-ene

Correct Answer: **(A)** Level: **Easy** Tagging:

Q51. The arrangement of decreasing order of stability of $\dot{C}H_3$, $\dot{C}_2H_5$, $(CH_3)_2\dot{C}H$ and $(CH_3)_3\dot{C}$ free radicals is :

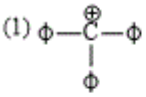
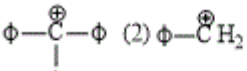
(A) $\dot{C}H_3 > \dot{C}_2H_5 > (CH_3)_2\dot{C}H > (CH_3)_3\dot{C}$

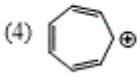
(B) $(CH_3)_3\dot{C} > (CH_3)_2\dot{C}H > \dot{C}_2H_5 > \dot{C}H_3$

(C) $\dot{C}_2H_5 > \dot{C}H_3 > (CH_3)_2\dot{C}H > (CH_3)_3\dot{C}$

(D) $(CH_3)_3\dot{C} > (CH_3)_2\dot{C}H > \dot{C}H_3 > \dot{C}_2H_5$

Correct Answer: **(B)** Level: **Easy** Tagging:

Q52. (1)  (2)  (3)

(4) 

Correct order of stability is

(A) 1>4>2>3

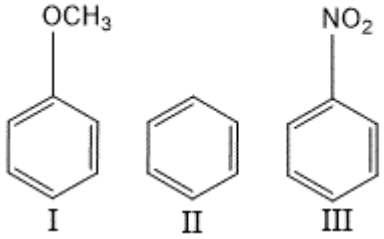
(B) 1>2>3>4

(C) 1>2>4>3

(D) 1>3>4>2

Correct Answer: **(A)** Level: **Easy** Tagging:

Q53. Among the following compounds (I-III) the correct order of reaction with the electrophile is



(A) II>III>I

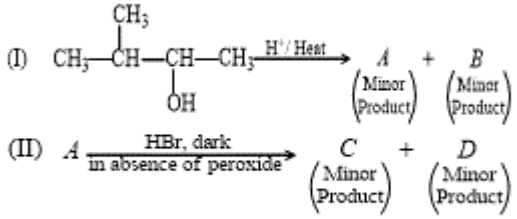
(B) III

(C) I>II>III

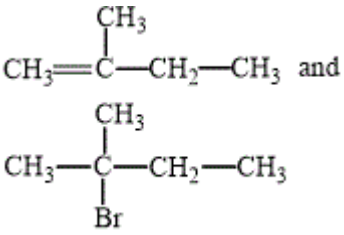
(D) I≈II>III

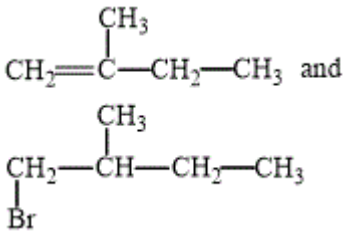
Correct Answer: **(C)** Level: **Easy** Tagging:

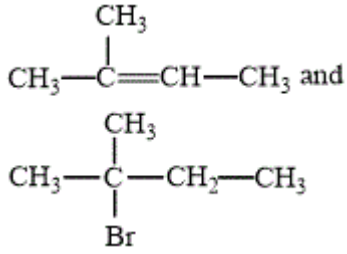
In the following reactions,

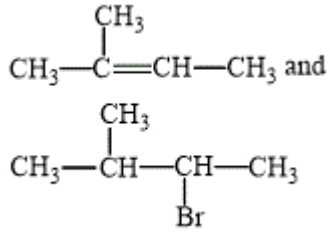


Q54. the major products (A) and (C) are respectively :

(A) 

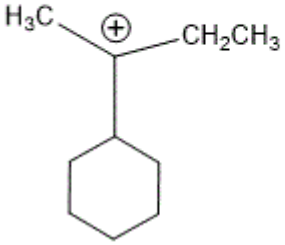
(B) 

(C) 

(D) 

Correct Answer: **(C)** Level: **Easy** Tagging:

The total number of contributing structures showing hyperconjugation (involving – C – H bonds) for the following carbocation is



Q55.

(A) Three

(B) Five

(C) Eight

(D) Six

Correct Answer: **(D)** Level: **Easy** Tagging:

Q56. The reaction $(CH_3)_3CBr \xrightarrow{H_2O} (CH_3)_3\ C.OH$ is:

(A) Elimination reaction

(B) Free radical reaction

(C) Substitution reaction

(D) Displacement reaction

Correct Answer: **(C)** Level: **Easy** Tagging: