GGSRDN
Educational Services Private Limited
NEET, JEE(Main/Advanced)
अभ्यास ही सबसे बड़ा गुरू है।

GGSRDN

Educational Services Private Limited

9th, 10th, NEET, JEE(Main/Advanced)

अभ्यास ही सबसे बड़ा गुरू है।

CLASS : XI

(ORGANIC CHEMISTRY)

DPP

DAILY PRACTICE PROBLEM

DPP-1 to 16

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 1

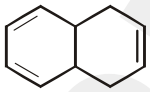
Total Marks : 32

Max. Time : 35 min.

Topic : IUPAC Nomenclature & Isomerism

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.4	(3 marks, 3 min.)	[12, 12]
Multiple choice objective ('–1' negative marking) Q.5 to Q.6	(4 marks, 4 min.)	[8, 8]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Match the Following (no negative marking) Q.8	(8 marks, 10 min.)	[8, 10]

1. Number of hydrogen atoms in the given compound is :



(A) 8 (B) 10 (C) 12 (D) 14

2. Ketene $CH_2 = C = O$ has

(A) Only sp^2 carbon atom (B) Only sp carbon atom

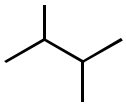
(C) sp^2 and sp carbon atoms (D) sp^3, sp^2 and sp carbon atoms

3. Which of the following is not an unsatrurated compound.

(A) $CH_3 - CH = CH - CH_3$ (B) $HC \equiv C - C \equiv CH$

(C) $CH_3 - CH_2 - CH_2 - HC$  (D) $CH_2 = CH - CH = CH_2$

4. Which of the following is homocyclic compound.

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

5.* The alicyclic compound/s is / are

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

6.* The correct options for a homologous series

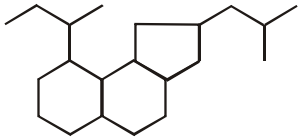
(A) All members have same general formula

(B) All members have same chemical properties

(C) All members have same physical properties

(D) All members have same functional groups

7. How many secondary carbon atom are present in the compound ?



8. **Match the following :**

	I Compounds	II Class of compounds
(A)		(p) Saturated compound
(B)		(q) Heterocyclic compound
(C)		(r) Unsaturated compound
(D)		(s) Hydrocarbon

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 2

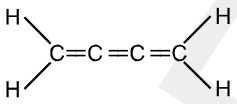
Total Marks : 31

Max. Time : 34 min.

Topic : IUPAC Nomenclature & Isomerism

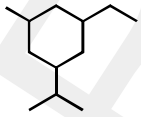
Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Multiple choice objective ('–1' negative marking) Q.6	(4 marks, 4 min.)	[4, 4]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Match the Following (no negative marking) Q. 8	(8 marks, 10 min.)	[8, 10]

1. Number of sp^2–sp sigma bonds in the given compound is :



(A) 1 (B) 2 (C) 3 (D) 4

2. How many tertiary carbon atom are present in the compound :



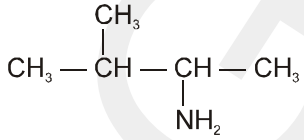
(A) 2 (B) 3 (C) 4 (D) 5

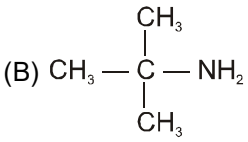
3. Which statement is incorrect :

(A) C_nH_{2n-2} is the general formula of alkyne (B) $C_nH_{2n+2}O$ is the general formula of alkanol

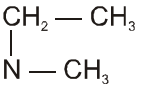
(C) C_nH_{2n} is the general formula of alkene (D) C_nH_{2n+2} is the general formula of cycloalkane

4. Which of the following is 3º-Amine :

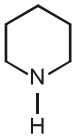
(A) 

(B) 

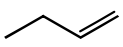
(C) $CH_3 - CH_2 - NH - CH_2 - CH_3$

(D) 

5. Which of the following is heteroaromatic compound :

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

6.* Which of the following has C_nH_{2n} general formula :

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

7. Calculate molecular weight of the lowest alkane containing a sequence of 1^0, 2^0, 3^0 and 4^0 carbon atoms.

8. **Match the following :**

Column I	Column II
(A) 4 carbon atoms alkane	(P) Molecular weight = 26
(B) 2 carbon atoms alkyne	(Q) Molecular weight = 42
(C) 3 carbon atoms alkene	(R) Molecular weight = 40
(D) 3 carbon atoms alkyne	(S) Molecular weight = 58

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 3

Total Marks : 32

Max. Time : 35 min.

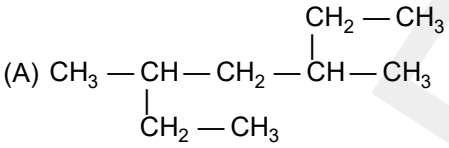
Topic : IUPAC Nomenclature & Isomerism

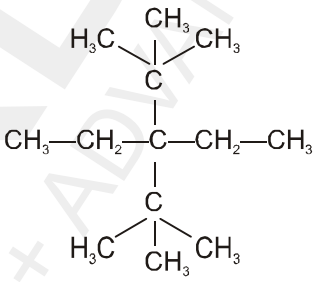
Type of Questions		**M.M., Min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.4	**(3 marks, 3 min.)**	**[12, 12]**
Multiple choice objective ('–1' negative marking) Q.5 to Q.6	**(4 marks, 4 min.)**	**[8, 8]**
Subjective Questions ('–1' negative marking) Q.7	**(4 marks, 5 min.)**	**[4, 5]**
Match the Following (no negative marking) Q. 8	**(8 marks, 10 min.)**	**[8, 10]**

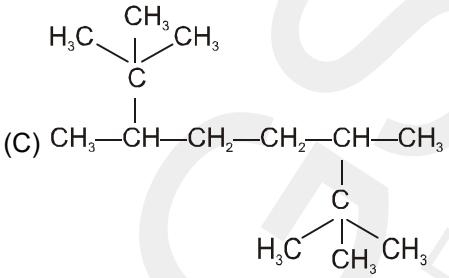
1. Which of the following alkanes contains primary, secondary, tertiary and quaternary carbon atoms together.

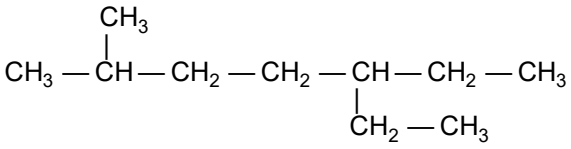
(A) $(CH_3)_3CH$ (B) $(C_2H_5)_3CH$ (C) $(CH_3)_3CCH_2CH(CH_3)_2$ (D) $(CH_3)_4C$

2. Which of the following has longest chain of carbon :

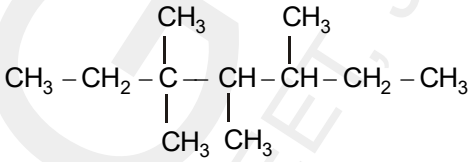
(A) 

(B) 

(C) 

(D) 

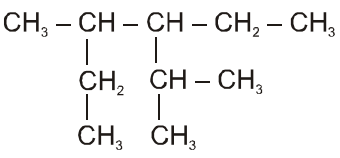
3. In following compound -



The correct lowest set of locants are

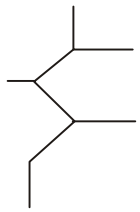
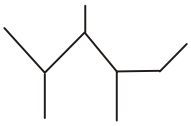
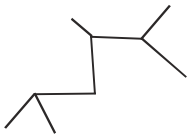
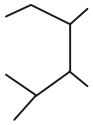
(A) 3,3,4,5 (B) 3,4,5,5 (C) 4,5,3,3 (D) 5,5,4,3

4. The correct IUPAC name of the following compound is



(A) 4–Ethyl–3,5–dimethylhexane (B) 2,4–Dimethyl–3–ethylhexane
(C) 3–Isopropyl–4–methyhexane (D) 3–Ethyl–2,4–dimethylhexane

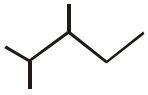
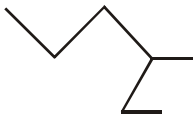
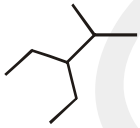
5.* The correct structure of 2,3,4-Trimethylhexane is :

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

6.* Choose the correct option's according to given IUPAC name :
(A) Neohexane is 2,2-Dimethylbutane.
(B) Isobutane is 2-Methylpropane.
(C) Isopentane is 2-Methylbutane.
(D) Neopentane is Dimethylpropane.

7. Calculate the molecular weight of the lowest hydrcarbon which contains sp & sp^2 hybridised carbon atoms only.

8. **Match the following :**

Column-I	**Column-II**
(A) 	(p) 3-Ethyl-2-methylpentane
(B) 	(q) 3-Methylhexane
(C) 	(r) 2,3–Dimethylbutane
(D) 	(s) 2,3–Dimethylpentane

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

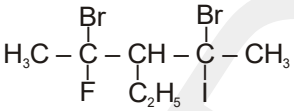
DPP No. 4

Total Marks : 27

Max. Time : 28 min.

Topic : IUPAC Nomenclature & Isomerism

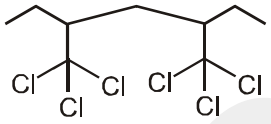
Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.4	(3 marks, 3 min.)	[12, 12]
Multiple choice objective ('–1' negative marking) Q.5 to Q.6	(4 marks, 4 min.)	[8, 8]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Comprehension ('–1' negative marking) Q.8	(3 marks, 3 min.)	[3, 3]

1. The correct IUPAC name of 

(A) 2,4-Dibromo-3-ethyl-2-fluoro-4-iodopentane (B) 2,4-Dibromo-3-ethyl-4-fluoro-2-iodopentane

(C) 2,4-Dibromo-4-fluoro-2-iodo-3-ethylpentane (D) 2,4-Dibromo-2-fluro-4-iodo-3-ethylpentane

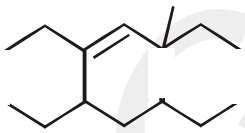
2. The correct IUPAC name of the following compound is :



(A) 1,1,1,5,5,5-Hexachloro-2,4-diethylpentane. (B) 3,5-Hexachlorodimethylheptane.

(C) 3,3,3,5,5,5-Hexachloromethylheptane. (D) 3,5-Bis(trichloromethyl)heptane.

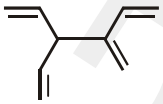
3. The correct IUPAC name of the following compound is :

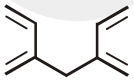
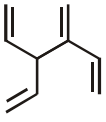


(A) 5,6-Diethyl-8-methyldec-6-ene (B) 5,6-Diethyl-3-methyloct-4-ene

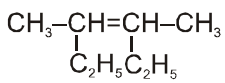
(C) 5,6-Diethyl-3-methyldec-4-ene (D) 2,4,5-Triethylnon-3-ene

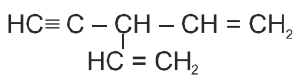
4. Diethenyl pentadiene is :

(A)  (B) 

(C)  (D) 

5.* Which IUPAC name is **correct** :

(A)  2,3–Diethylbutene

(B)  3-Ethynylpenta-1, 4-diene

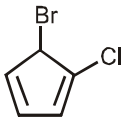
(C) $HC\equiv C-CH=CH_2$ Butenyne

(D) $CH_3-CH=CH-C\equiv CH$ Pent–3–en–1–yne

6.* Which of the given is/are correct IUPAC names :

(A) 2,3-Dichlorocyclohex-1-ene
(B) 2,5-Dimethyloct-4-ene
(C) 4-Bromo-1-chloropentane
(D) 6-Ethyl-2,3-dimethylnonane

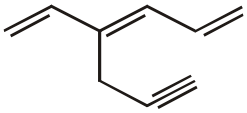
7. Write the sum of locant in the following compound is:



8. **Comprehension #**

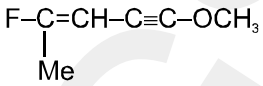
While naming unsaturated hydrocarbons, lowest locant is alloted for multiple bond than any substituent, since the priorty of multiple bond is more than any substituent present. When the locant for unsaturated is same from either side then double bond is given priority over triple bond. For main chain selection if the size of main chain and number of unsaturation are equal, then priority is given to the lowest set of locants for unsaturation.

(a) IUPAC name of the following compound is



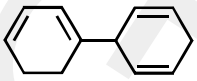
(A) 3-(Prop-2-ynl)hexe-1,3,5-triene
(B) 4-Ethenylhepta-1, 3-dien-6-yne
(C) 4-Ethenylhexa-4, 6-dien-1-yne
(D) 4-(Prop-2-ynyl) hexa-1,3,5-triene

(b) IUPAC name of the following compound is



(A) 4–Fluoro–1–methoxypent–1–yn–4–ene
(B) 1–Fluoro–1–methyl–4–methoxybut–1–en–3–yne
(C) 4–Fluoro–1–methoxypent–3–en–1–yne
(D) 2–Fluro–5–methoxypent–2–en–4–yne

(c) IUPAC name of the following compound is



(A) 3–(cyclohexa–1, 3-dienyl)cyclohexa-1,4-diene
(B) 4–(cyclohexa–2, 5-dienyl)cyclohexa-1,3-diene
(C) 2–(cyclohexa–1, 3-dienyl)cyclohexa-1,3-diene
(D) 1–(cyclohexa–2, 5-dienyl)cyclohexa-1,3-diene

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

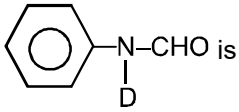
DPP No. 5

Total Marks : 31

Max. Time : 34 min.

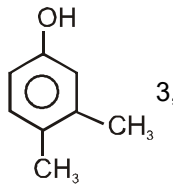
Topic : IUPAC Nomenclature & Isomerism

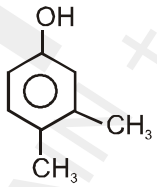
Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.3	(3 marks, 3 min.)	[9, 9]
Assertion and Reason (no negative marking) Q.4	(3 marks, 3 min.)	[3, 3]
Multiple choice objective ('–1' negative marking) Q.5	(4 marks, 4 min.)	[4, 4]
Comprehension ('–1' negative marking) Q.6	(3 marks, 3 min.)	[3, 3]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Match the Following (no negative marking) Q.8	(8 marks, 10 min.)	[8, 10]

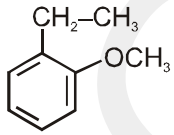
1. IUPAC name of  is

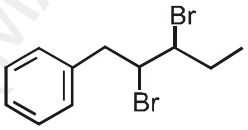
(A) N-Deutero-N-formylbenzenamine
(B) N-Phenylamino-N-deuteromethanal
(C) N-Deutero-N-phenylmethanamide
(D) N-Deuterobenzene carboxamide

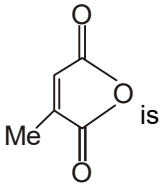
2. Which of the following is correct IUPAC name :

(A)  3,4-Dimethylphenol.

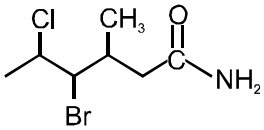
(B)  4-Hydroxy-2-methyltoluene.

(C)  1-Ethyl-2-anisole.

(D)  1-(2,3-Dibromopentyl) benzene.

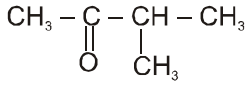
3. Correct IUPAC name of the compound  is

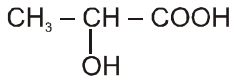
(A)2-Methylbutenedioic anhydride
(B) 3-Methylbutenedioic anhydride
(C) 2-Methyl-1,4-diketobutene epoxy
(D) 2-Methylcyclopentanoxy-1,4-dione

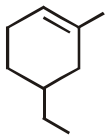
4. **Statement-1 :**  3-Bromo-2-chloro-4-methylpentanamide is incorrect IUPAC name.

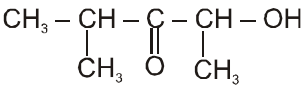
Statement-2 : In case of chain terminating senior most functional group numbering starts from itself.
(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1.
(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1.
(C) Statement-1 is True, Statement-2 is False.
(D) Statement-1 is False, Statement-2 is True.

5.* Which of the following is/ are incorrect IUPAC name :

(A)  2-Methylbutan -3-one

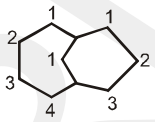
(B)  2-Hydroxypropanoic acid

(C)  5-Ethyl-1-methylcyclohex-1-ene

(D)  4-Methyl-3-oxopentan-2-ol

6. Comprehension #

Bicyclo compounds are named by using the alkane name to designate the total number of carbon and bicyclo is used as prefix. While naming the bicycloalkane we write an expression between the word bicyclo and alkane (in square bracket), that denotes the number of carbon atoms in each bridge. The numerals are written in descending order and the numbers are separated by full stops.

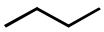


Bicyclo [4. 3. 1] decane

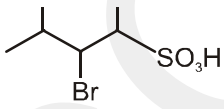
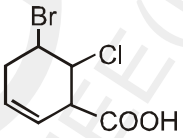
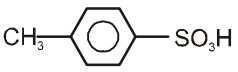
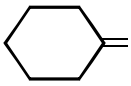
(a) The compound  is known by which of the following name :

(A) Bicyclo [2. 2. 2] octane
(B) Bicyclo [2. 2. 1] octane
(C) Bicyclo [2. 2. 1] heptane
(D) Bicyclo [2. 1. 2] heptane

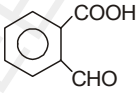
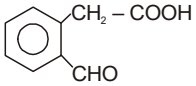
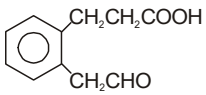
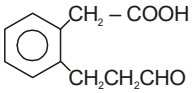
(b) The structure of bicyclo [1. 1. 0] butane is :

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

7. Write the IUPAC name of the following compound :

(i)  (ii)  (iii)  (iv) 

8. Match the following compound with their IUPAC name :

Compound	IUPAC Name
(P) 	(W) 3-[2-(2-Oxoethyl)phenyl]propanoic acid
(Q) 	(X) 2-[2-(3-Oxopropyl)phenyl]ethanoic acid
(R) 	(Y) 2-(2-Formylphenyl)ethanoic acid
(S) 	(Z) 2-Formylbenzenecarboxylic acid

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

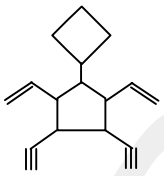
DPP No. 6

Total Marks : 32

Max. Time : 35 min.

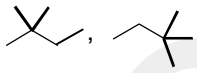
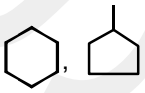
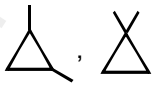
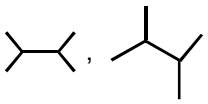
Topic : IUPAC Nomenclature & Isomerism, Structural Isomerism

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.4	(3 marks, 3 min.)	[12, 12]
Multiple choice objective ('–1' negative marking) Q.5 to Q.6	(4 marks, 4 min.)	[8, 8]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Match the Following (no negative marking) Q. 8	(8 marks, 10 min.)	[8, 10]

1. Degree of unsaturation in  is :

(A) 6 (B) 8 (C) 7 (D) 10

2. Which of the following pair is the chain isomer ?

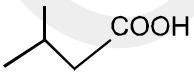
(A)  (B)  (C)  (D) 

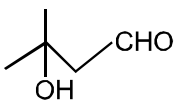
3. Molecular formula C_4H_8 which type of isomerism will not show :

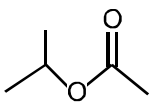
(A) Chain (B) Metamerism (C) Position (D) Geometrical

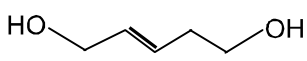
4. Minimum carbon atoms are required to ketone to show position isomerism :

(A) 3 (B) 4 (C) 5 (D) 6

5.*  have functional isomer relation with

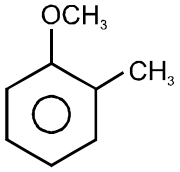
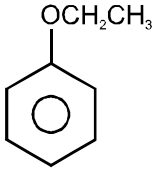
(A) 

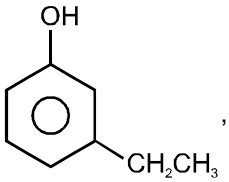
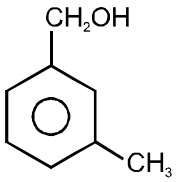
(B) 

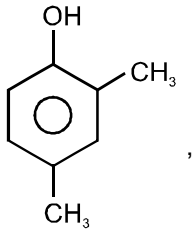
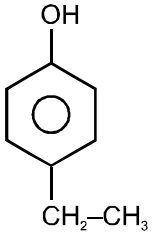
(C) 

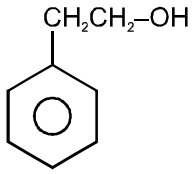
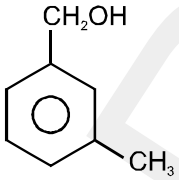
(D) 

6.* Which is/are correctly matched.

(A)  ,  Metamers

(B)  ,  Functional group isomers

(C)  ,  Chain isomers

(D)  ,  Positional isomers

7. Fill the correct type of isomerism

(A) $CH_3 - CH_2 - CH_2 - CH_2 - NH_2$ (B) $CH_3 - CH_2 - NH - CH_2 - CH_3$

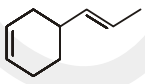
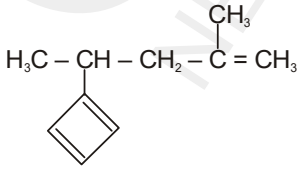
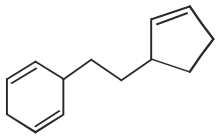
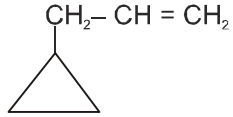
(C) $CH_3 - CH_2 - \underset{\displaystyle CH_3}{\overset{|}{N}} - CH_3$ (D) $CH_3 - CH_2 - CH_2 - NH - CH_3$

(E) $CH_3 - CH_2 - \underset{\displaystyle CH_3}{\overset{|}{CH}} - NH_2$

(i) A & B are_____ (ii) B & C are_____ (iii) A & C are_____

(iv) B & D are_____ (v) A & E are_____ (vi) C & E are_____

8. **Match the following:**

Column I Compound	**Column II Degree of unsaturation**
(A) 	(p) 2
(B) 	(q) 5
(C) 	(r) 4
(D) 	(s) 3

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 7

Total Marks : 27

Max. Time : 28 min.

Topic : IUPAC Nomenclature & Isomerism

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Multiple choice objective ('–1' negative marking) Q.6 to Q.7	(4 marks, 4 min.)	[8, 8]
Subjective Questions ('–1' negative marking) Q.8	(4 marks, 5 min.)	[4, 5]

1. In allene (C_3H_4), the type(s) of hybridisation of the carbon atoms is (are) :

(A) sp and sp^3 (B) sp and sp^2

(C) only sp^3 (D) sp^2 and sp^3

2. The carboxyl functional group (– COOH) is present in :

(A) picric acid (B) barbituric acid

(C) ascorbic acid (D) aspirin

3. Aspirin is known as :

(A) Acetyl salicylic acid (B) Phenyl salicylate

(C) Acetyl salicylate (D) Methyl salicylic acid

4._ How many benzylic hydrogen are present in cumene :

(A) 1 (B) 2 (C) 3 (D) 6

5._ How many allylic hydrogen are present in Methylbut-2-ene.

(A) 6 (B) 8 (C) 9 (D) 10

6._* Which of the following is/are allylic alcohols ?

(A) But-3-en-1-ol (B) But-3-en-2-ol

(C) But-2-en-1-ol (D) But-1-en-1-ol

7._* Which name/names is/are correct ?

(A) CH_2Cl_2 ; Methylene chloride (B) $CH_3–CHCl_2$; Ethylidene chloride

(C) $CH_2 = CH – Cl$; Vinyl chloride (D) $HC \equiv C – CH_2 – Cl$; Propargyl chloride

8._ Write the structure of the following.

(a) Benzoquinone (b) m-Xylene

(c) Succinic acid (d) Lactic acid

ORGANIC CHEMISTRY

DPP
DAILY PRACTICE PROBLEMS

DPP No. 8

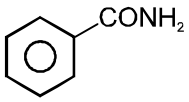
Total Marks : 30

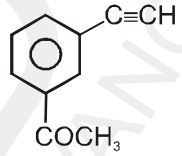
Max. Time : 33 min.

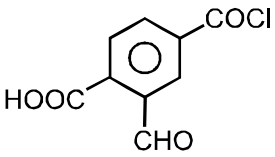
Topic : Structural Determination

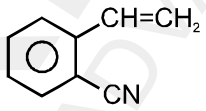
Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Comprehension ('–1' negative marking) Q.6	(3 marks, 3 min.)	[3, 3]
Subjective Questions ('–1' negative marking) Q.7	(4 marks, 5 min.)	[4, 5]
Match the Following (no negative marking) Q.8	(8 marks, 10 min.)	[8, 10]

1. Which of the following is correctly matched with degree of unsaturation ?

(A)  , 4

(B)  , 7

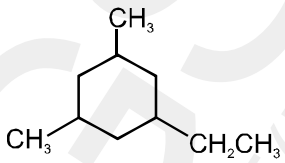
(C)  , 8

(D)  , 5

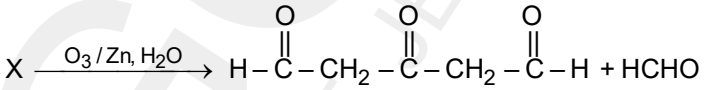
2. How many alkene isomers will produce 1-Ethyl-3-methylcyclopentane on catalytic hydrogenation ?

(A) 6 (B) 7 (C) 8 (D) 9

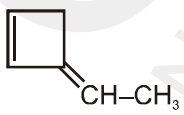
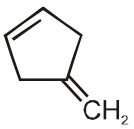
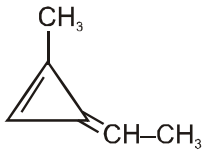
3. How many products (structural isomers) are formed by monochlorination of ?

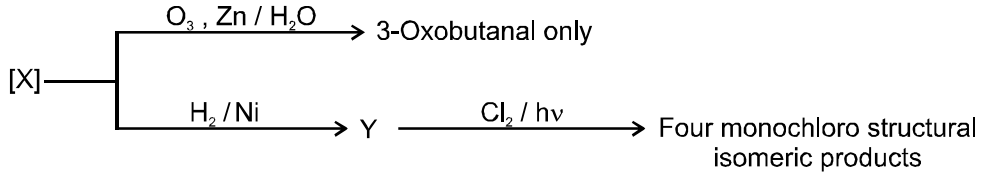


(A) 6 (B) 7 (C) 8 (D) 9

4. 

The structure of X will be :

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

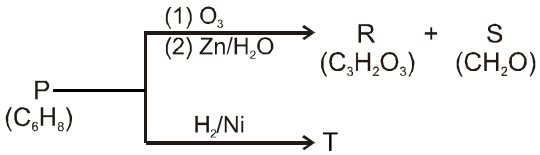
5. 

Compound 'X' is :

(A) 1-Methylcyclopropene (B) 1, 4-Dimethylcyclohexa-1,4-diene

(C) 1, 4-Dimethylcyclohexa-1,3-diene (D) 1, 2-Dimethylcyclohexa-1,4-diene

6. Comprehension #



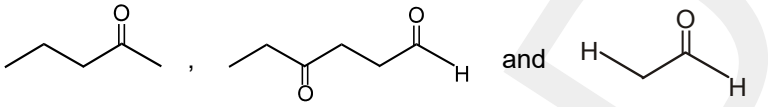
(a). Total number of monochloro structural products are formed on chlorination of " T " :

(A) 2 (B) 3 (C) 4 (D) 5

(b). How many alkyne can give " T " on catalytic hydrogenation :

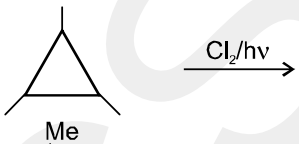
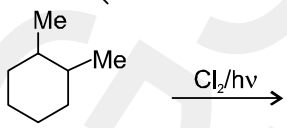
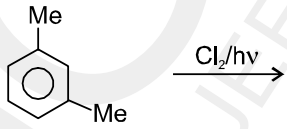
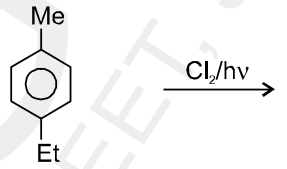
(A) 1 (B) 2 (C) 3 (D) Not possible

7. A compound with molecular formula $C_{13}H_{24}$ absorbs two molar equivalents of hydrogen to form 3-Ethyl-7-methyldecane. On reductive ozonolysis it forms following three products.



Assign the structure of the compound.

8. Match the column :

Column (I) (Compound)	Column (II) (No. of monochloro structural product)
(A) 	(p) = 1
(B) 	(q) = 2
(C) 	(r) = 3
(D) 	(s) = 4

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 9

Total Marks : 39

Max. Time : 39 min.

Topic : General Organic Chemistry (electronic effect)

Type of Questions		M.M., Min.
Fill in the Blanks ('–1' negative marking) Q.1 (1 to 7)	(3 marks, 3 min.)	[21, 21]
Short Subjective Questions ('–1' negative marking) Q.2(1 to 6)	(3 marks, 3 min.)	[18, 18]

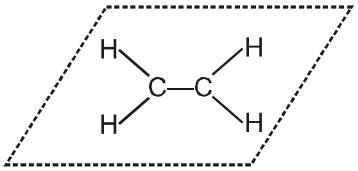
1. Fill up the hybridisation & the ideal bond angles for the respective atoms in blank space.

	No. of sp^2–sp^2 σ-bonds	No. of sp^2–sp σ-bonds
Hyb. : ☐ ☐ ☐ **1.** $CH_3-CH_2-CH_3$ B. A : ☐ ☐ ☐ Hyb.: ☐ ☐ ☐ **2.** $CH_3-CH=CH_2$ B. A : ☐ ☐ ☐ Hyb.: ☐ ☐ ☐ **3.** $CH_3-C\equiv CH_2$ B. A : ☐ ☐ ☐ Hyb. : ☐ ☐ ☐ ☐ **4.** $CH_2=CH-CH=CH_2$ B. A : ☐ ☐ ☐ ☐ Hyb. : ☐ ☐ ☐ ☐ **5.** $CH_2=CH-CH\equiv CH$ B. A : ☐ ☐ ☐ ☐ Hyb. : ☐ ☐ ☐ **6.** $CH_2=C=CH_2$ B. A : ☐ ☐ ☐ Hyb. : ☐ ☐ ☐ ☐ ☐ ☐ **7.** $CH_2=CH-CH_2-HC=C=CH_2$ B. A : ☐ ☐ ☐ ☐ ☐ ☐ Hyb.: ☐ ☐ ☐		

2. Draw the orbital diagrams for the following important structures.

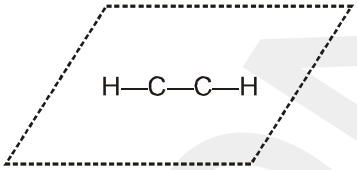
1. $CH_2 = CH_2$

Ethyne



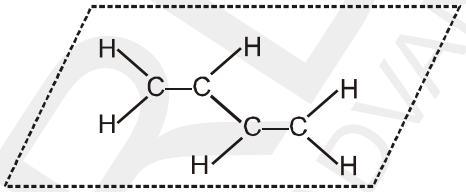
2. $HC \equiv CH$

Ethyne



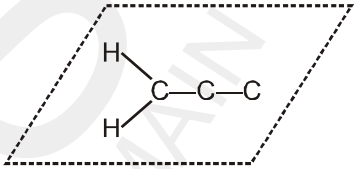
3. $H_2C = CH–CH = CH_2$

Buta-1,3-diene



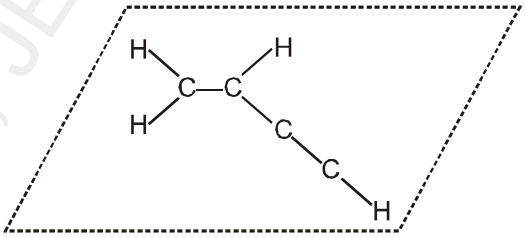
4. $CH_2 = C = CH_2$

Propadiene



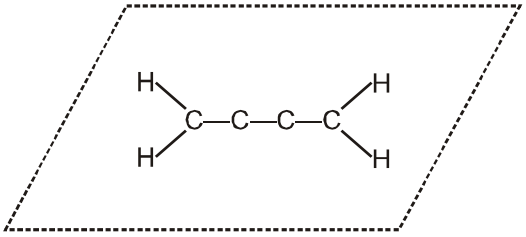
5. $CH_2 = CH – C \equiv CH$

Butenyne



6. $H_2C = C = C = CH_2$

Buta-1,2,-3-triene



ORGANIC CHEMISTRY

DPP
DAILY PRACTICE PROBLEMS

DPP No. 10

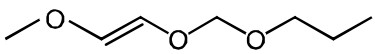
Total Marks : 49

Max. Time : 50 min.

Topic : General Organic Chemistry

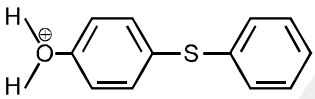
Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.15	(3 marks, 3 min.)	[45, 45]
Subjective Questions ('–1' negative marking) Q.16	(4 marks, 5 min.)	[4, 5]

1. How many lone pairs of electrons are there in the given compound ?



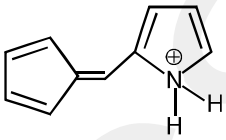
(A) 4 (B) 2 (C) 8 (D) 6

2. How many lone pairs of electrons are there in the given compound ?



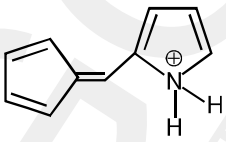
(A) 4 (B) 3 (C) 8 (D) 6

3. What is the hybridisation of positively charged nitrogen atom ?



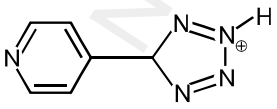
(A) sp (B) sp^2 (C) sp^3 (D) None of these

4. How many sp^2 hybridised atoms are there in the given cation ?



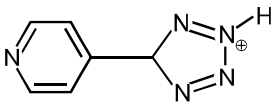
(A) 8 (B) 9 (C) 10 (D) 12

5. How many lone pairs are present in the given cation ?



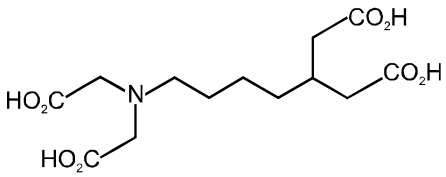
(A) 3 (B) 4 (C) 5 (D) 6

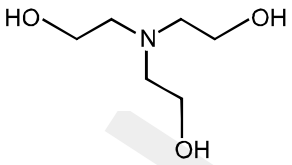
6. How many N atoms are sp^2 hybridised in the given cation ?

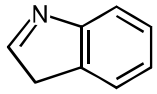


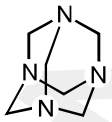
(A) 3 (B) 4 (C) 5 (D) 6

7. In which of the following molecules is the nitrogen atom sp^2 hybridised ?

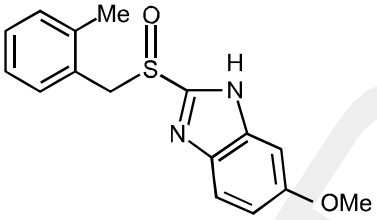
(A) 

(B) 

(C) 

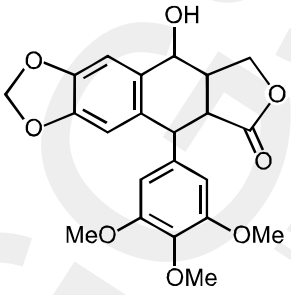
(D) 

8. Geometry around how many carbon atoms is tetrahedral in the given structure ?



(A) 4 (B) 2 (C) 3 (D) 5

9. How many sp^3 hybridised carbon atoms are there in the given anti-cancer compound (podophyllotoxin) ?



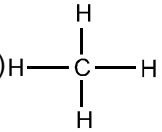
the anti-cancer compound
podophyllotoxin

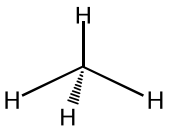
(A) 6 (B) 7 (C) 9 (D) 8

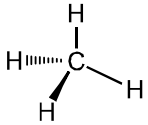
10. Bond order of C–C bond in benzene  is :

(A) 1 (B) 2 (C) 1.5 (D) two of above

11. Which of the following is correct three dimentional representation of CH_4 ?

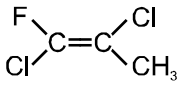
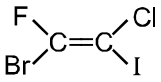
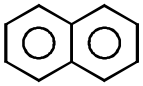
(A) 

(B) 

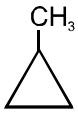
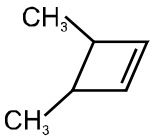
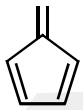
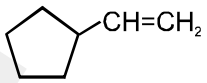
(C) 

(D) 

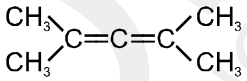
12. In which of the following all atoms do not present in the same plane ?

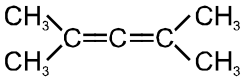
(A)  (B)  (C)  (D) 

13. In which of the following all carbon atoms are present in the same plane ?

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

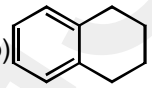
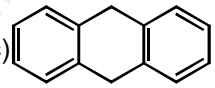
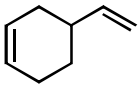
14. In which of the following are all C atoms linearly arranged ?

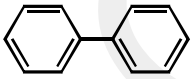
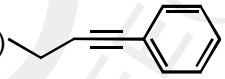
(A) $CH_2=CH-C\equiv CH$ (B) $CH\equiv C-CH_2-CH_3$ (C)  (D) $CH_3-C\equiv C-CH_3$

15. In  How many carbon atoms are linearly arranged ?

(A) 1 (B) 8 (C) 3 (D) 7

16. A maximum of how many (i) atoms (ii) carbon atoms must lie in same plane in each of the following molecule?

(a)  (b)  (c)  (d) 

(e)  (f) 

No. of sp^2-sp^2 σ-bonds

No. of sp^2-sp σ-bonds

ORGANIC CHEMISTRY

DPP
DAILY PRACTICE PROBLEMS

DPP No. 11

Total Marks : 27

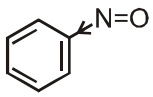
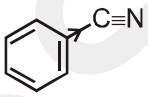
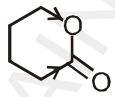
Max. Time : 29 min.

Topic : General Organic Chemistry

Type of Questions		**M.M., Min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.5	**(3 marks, 3 min.)**	**[15, 15]**
Multiple choice objective ('–1' negative marking) Q.6	**(4 marks, 4 min.)**	**[4, 4]**
Subjective Questions ('–1' negative marking) Q.7 to Q.8	**(4 marks, 5 min.)**	**[8, 10]**

1. Inductive effect is a permanent effect and is distance dependent.
(A) Always (B) Some time (C) never (D) Can not decide

2. Which of the following statement is CORRECT regarding the inductive effect ?
(A) electron-donating inductive effect(+I effect) is generally more powerful than electron-withdrawing inductive effect(-I effect)
(B) it implies the shifting of σ electrons from more electronegative atom to the lesser electronegative atom in a molecule
(C) it implies the shifting of σ electrons from less electronegative atom to the more electronegative atom in a molecule
(D) it increases with increase in distance.

3. In which of the following species, incorrect direction of Inductive effect is/are shown ?
(A)  (B)  (C)  (D) $CH_3 - CH_2 \leftarrow MgBr$

4. Maximum –I effect is exerted by the group
(A) C_6H_5 (B) $-OCH_3$ (C) –Cl (D) $-NH_2$

5. Which order of I effect is incorrect.

(I) $-\overset{\oplus}{N}(CH_3)_3 > -\overset{\oplus}{S}(CH_3)_2$ [–I] (II) $-OCH_3 > -OH$ [–I]

(III) –F > –Cl [–I] (IV) $-CH_3 > -\overset{\ominus}{O}$ [+I]

(A) II, III & IV (B) III & IV (C) IV only (D) all

6.* Which of the following statement/s is/are correct for the inductive effect ?
(A) It is a permanent effect (B) It transmits through sigma electrons
(C) It is represented by $\longleftrightarrow$ (D) It is represented by $\longrightarrow$ or $\longleftarrow$.

7. In which C – C bond of $\overset{3}{C}H_3 - \overset{2}{C}H_2 - \overset{1}{C}H_2 - Br$, the inductive effect is expected to be the least.

8. How many groups show –I effect?

$-CH_3$, $-\overset{\oplus}{N}H_3$, $-OH$, $-O^{\ominus}$, $-N(CH_3)_2$, $-SO_3H$, $-CHO$, $-Cl$, $-COO^{\ominus}$

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 12

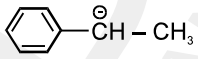
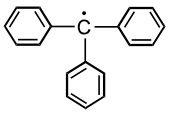
Total Marks : 34

Max. Time : 37 min.

Topic : General Organic Chemistry

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.4 to Q.5	(3 marks, 3 min.)	[6, 6]
Multiple choice objective ('–1' negative marking) Q.1 to Q.3 & Q.6	(4 marks, 4 min.)	[16, 16]
Match the Following (no negative marking) Q.7	(8 marks, 10 min.)	[8, 10]
Subjective Questions ('–1' negative marking) Q.8	(4 marks, 5 min.)	[4, 5]

1.* Resonance is possible/s in

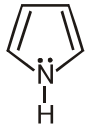
(A) $CH_2 = \overset{\oplus}{N}H_2$ (B) $CH_3CH = C = \overset{\ominus}{C}H$ (C)  (D) 

2.* Which of the following is/are acceptable resonating structures of Buta-1, 2, 3-triene.

(A) $\overset{\ominus}{\ddot{C}}H_2 - C \equiv C - \overset{\oplus}{C}H_2$ (B) $CH_2 = C = C = CH_2$

(C) $\overset{\oplus}{C}H_2 - C \equiv C - \overset{\ominus}{\ddot{C}}H_2$ (D) $\dot{C}H_2 - C \equiv C - \dot{C}H_2$

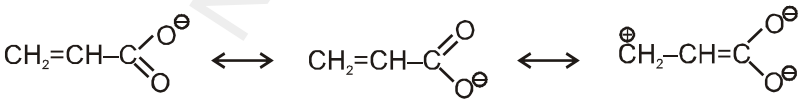
3.* In which case the unshared pair (lone pair) of electrons are delocalized.

(A)  (B) $H_2C = \ddot{N} - CH_3$ (C) $H_2C = \overset{\oplus}{N} = \overset{\ominus}{\ddot{N}}:$ (D) $:\overset{\ominus}{\ddot{N}} = \overset{\oplus}{N} = \overset{\ominus}{\ddot{N}}:$

4. The most stable resonating structure is –

(A) $H_2N - \overset{\oplus}{C}H - CH = CH - OCH_3$ (B) $H_2\overset{\oplus}{N} = CH - CH = CH - OCH_3$

(C) $H_2N - CH = CH - CH = \overset{\oplus}{O}CH_3$ (D) $H_2\overset{\oplus}{N} = CH - \overset{\oplus}{C}H = \overset{+}{O}CH_3$

5. 

I II III

The correct statement about the above structures is :

(A) II is the minor contributor to the real hybrid.

(B) III is most stable structure

(C) I contributes more to the real hybrid than that of II.

(D) I and II are equal contributors and III is a minor contributor.

6.* Which of the following are correctly orderd for resonance stability

(A) $\overset{\ominus}{C}H_2-CH=\overset{\oplus}{N}=O \longleftrightarrow CH_2=CH-\ddot{N}=O \longleftrightarrow \overset{\oplus}{C}H_2-CH=\ddot{N}-\overset{\ominus}{O}$ (I) (II) (III) (II > I > III)

(B) $\overset{\oplus}{N}H_2=C=O \longleftrightarrow \ddot{N}H_2-\overset{\oplus}{C}=O \longleftrightarrow NH_2-C\equiv\overset{\oplus}{O}$ (I) (II) (III) (I > III > II)

(C) $H_3C-\overset{\oplus}{C}=O \longleftrightarrow H_3C-C\equiv\overset{\oplus}{O}$ (I > II)

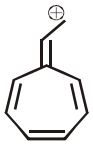
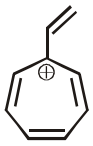
(D) $CH_3-C(=O)-\overset{\ominus}{O} \longleftrightarrow CH_3-C(-\overset{\ominus}{O})=O$ (I) (II) (II = I)

7. Match the resonance contributors in Column I with their attributes (properties) mentioned in Column II

Column I		**Column II**
(A)	$CH_3CH_2-\overset{O}{\overset{\|\|}{C}}-OCH_2CH_3$	(p) Equal contributor
(B)	$CH_3-\overset{\oplus}{N}(=O)-\overset{\ominus}{O}$	(q)major contributor
(C)	$CH_3-\overset{O}{\overset{\|\|}{C}}-\overset{\ominus}{C}H-\overset{O}{\overset{\|\|}{C}}-CH_3$	(r) minor contributor

8. Give stability order in the following pairs.

(a) $CH_2=\overset{\oplus}{N}H_2$ $\quad$ $\overset{\oplus}{C}H_2-NH_2$

(b)  

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 13

Total Marks : 30

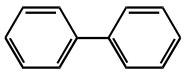
Max. Time : 33 min.

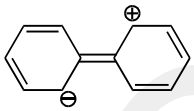
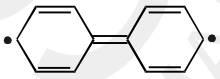
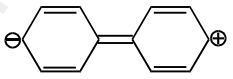
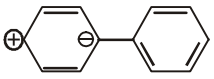
Topic : General Organic Chemistry

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Assertion and Reason (no negative marking) Q.6	(3 marks, 3 min.)	[3, 3]
Match the Following (no negative marking) Q.7	(8 marks, 10 min.)	[8, 10]
Subjective Questions ('–1' negative marking) Q.8	(4 marks, 5 min.)	[4, 5]

1. Which of the following is/are resonating structures of diazomethane (CH_2N_2).

(A) HN=C=NH (B) $CH_2 = \overset{+}{N} = N^-$ (C) $\bar{C}H_2 - \overset{+}{N} \equiv N$ (D) all of these

2. Which of the following does not represent the resonating structure of 

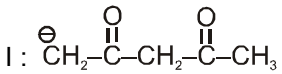
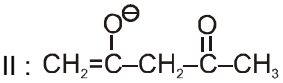
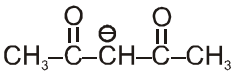
(A)  (B)  (C)  (D) 

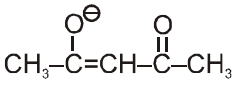
3. Decreasing + m-power of given group is :

(I) $-NH_2$ (II) $-OH$ (III) $-O^{\ominus}$ (IV) $-NH-CO-CH_3$

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

4. The stability order of the following species is :

I :  II :  III :  IV :

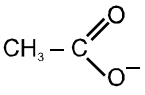


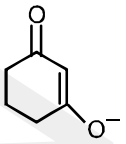
(A) I > II > III > IV (B) III > I > II > IV (C) IV > II > III > I (D) IV > III > II > I

5. Identify the correct statements

(i) All C – C bonds in  are equal.

(ii) All C – C bonds in $CH_2 = CH - CH = CH_2$ are equal.

(iii) All C – O bonds in  are equal.

(iv) All C – O bond in  are equal.

(A) i, ii, iii, iv (B) i, iii, iv (C) i, ii, iii (D) ii, iii, iv

6. **STATEMENT -1** : Bond length of double bond in benzene is more than the bond length of double bond in buta-1,3-diene.

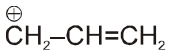
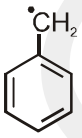
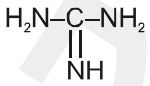
STATEMENT -2 : Increase in delocalisation of π electrons increases the bond length of double bond.

(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1.

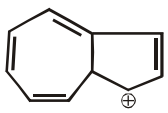
(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1

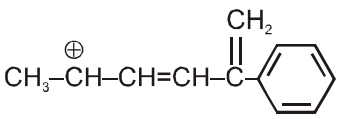
(C) Statement-1 is True, Statement-2 is False (D) Statement-1 is False, Statement-2 is True

7. **Match the column :**

	Column-I		**Column-II**
(A)		(p)	Resonance possible
(B)	$H_2N-CH=CH_2$	(q)	Even number of p-electrons
(C)		(r)	localized lone pair of e^-.
(D)		(s)	Delocalized lone pair of e^-.
		(t)	2 e^- in p orbitals

8._ Find the total number of carbon where positive charge can be delocalised by true resonance [Including the given structure] :

(a) 

(b) 

ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 14

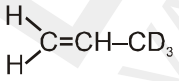
Total Marks : 30

Max. Time : 33 min.

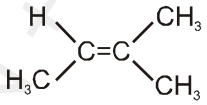
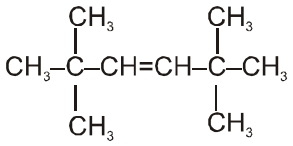
Topic : General Organic Chemistry

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Assertion and Reason (no negative marking) Q.6	(3 marks, 3 min.)	[3, 3]
Match the Following (no negative marking) Q.7	(8 marks, 10 min.)	[8, 10]
Subjective Questions ('–1' negative marking) Q.8	(4 marks, 5 min.)	[4, 5]

1. Which of the following species will show hyperconjugation :

(A) C_6H_5—CH_3 (B)  (C)  (D) 

2. Which of the following alkenes will show maximum number of hyperconjugation forms ?

(A)  (B) CH_3–CH=CH–CH_3 (C)  (D) 

3. Which of the following groups in aromatic compounds is/are electron releasing group (s) ?

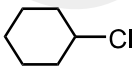
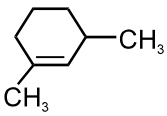
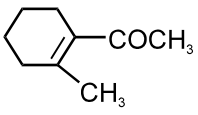
(A) – CH_3 (B) – $\overset{+}{N}H_3$ (C) – NO_2 (D) – OCH_3

4. Which of the following molecule has longest C=C bond length.

(A) CH_3–CH=CH–CH=CH–CH_3 (B) CH_2=CH–CH=CH_2

(C) CH_3–CH=CH–CH_3 (D) CH_2=CH_2

5. In which of the following molecules all the effects namely inductive, mesomeric and hyperconjugation operate :

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

6. **Statement-1 :** Vinyl chloride will show both –I effect as well as + M due to chlorine.

Statement-2 : –I & +M can never be shown by any molecule.

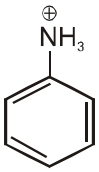
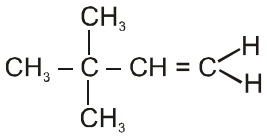
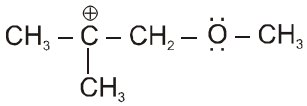
(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1.

(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1.

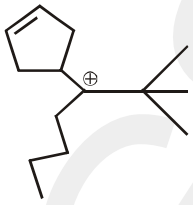
(C) Statement-1 is True, Statement-2 is False.

(D) Statement-1 is False, Statement-2 is True.

7. Match the compounds given in column I with their electronic effects mentioned in column II

	Column I		**Column II**
(A)		(p)	Inductive effect
(B)		(q)	Delocalisation of π electron
(C)	$CH_3 - CH = CH - \ddot{O}H$	(r)	Hyperconjugation
(D)		(s)	Mesomeric effect

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



ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 15

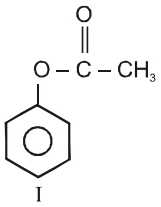
Total Marks : 34

Max. Time : 40 min.

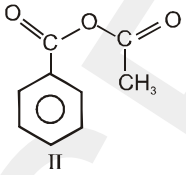
Topic : General Organic Chemistry

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.2	(3 marks, 3 min.)	[6, 6]
Multiple choice objective ('–1' negative marking) Q.3	(4 marks, 4 min.)	[4, 4]
Match the Following (no negative marking) Q.4	(8 marks, 10 min.)	[8, 10]
Subjective Questions ('–1' negative marking) Q.5 to Q.8	(4 marks, 5 min.)	[16, 20]

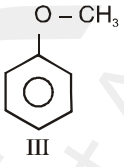
1. The reactvity order of benzene ring for the given reaction is (benzene ring with highest π electron density will be most reactive) Aromatic compound $\xrightarrow{E^{\oplus}}$



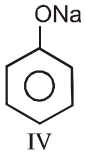
I



II



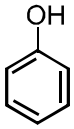
III



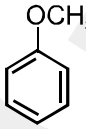
IV

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

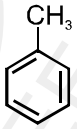
2. Arrange the following compounds in the order of decreasing reactivity towards electrophilic substitution



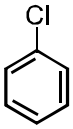
(I)



(II)



(III)



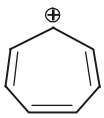
(IV)

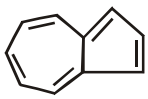

(V)

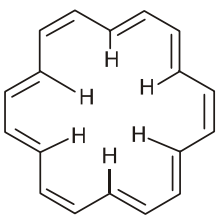
(A) V > IV > III > II > I
(B) I > II > III > V > IV
(C) I > II > IV > III > V
(D) I > III > IV > II > V

3.* Which of the following are Aromatic in nature.

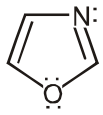
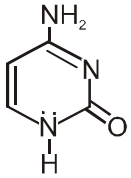
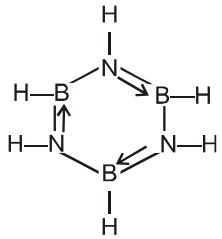
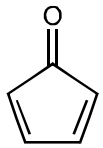
(A) 

(B) 

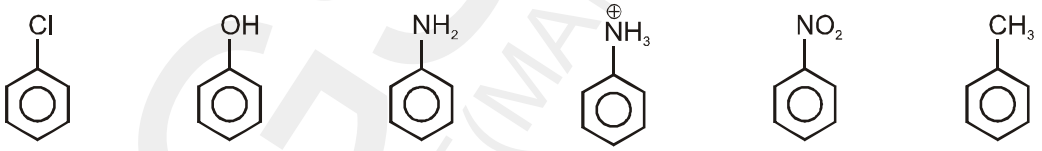
(C) 

(D) 

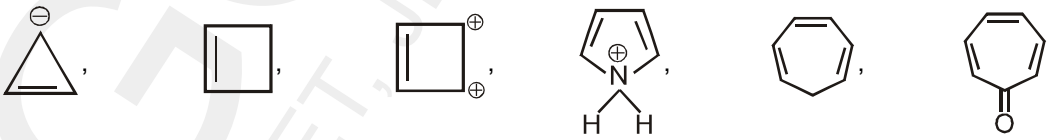
4. Match the following :

Column – I	**Column – II**
(A) 	(p) Aromatic
(B) 	(q) Non aromatic
(C) 	(r) Anti aromatic
(D) 	(s) Heterocyclic

5. How many of the following compounds are more reactive than benzene towards electrophilic substitution.



6. How many species out of the following are aromatic ?



7. Explain the terms Inductive and Electromeric effects.

8. Which bond is more polar in the following pairs of molecules?

(a) H_3C-H H_3C-Br (b) H_3C-NH_2 H_3C-OH (c) H_3C-OH H_3C-SH

ORGANIC CHEMISTRY

DPP
DAILY PRACTICE PROBLEMS

DPP No. 16

Total Marks : 120

Max. Time : 120 min.

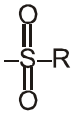
Topic : General Organic Chemistry

Type of Questions **M.M., Min.**

Fill in the Blanks ('–1' negative marking) Q.1 **(3 marks, 3 min.)** **[3, 3]**

1. Classify the following groups as +m, –m, +I, –I, +HC, –HC.

S.No.	Species	+ I	– I	+ m	– m	+ H.C.	– H.C.
1	$-NO_2$						
2	–CN						
3	–CHO						
4	$-\overset{\overset{O}{\|}}{C}-R$						
5	$-\overset{\overset{O}{\|}}{C}-OR$						
6	$-\overset{\overset{O}{\|}}{C}-O^-$						
7	$-\overset{\overset{O}{\|}}{C}-F$						
8	$-\overset{\overset{O}{\|}}{C}-NH_2$						
9	$-NH-\overset{\overset{O}{\|}}{C}-CH_3$						
10	$-O-\overset{\overset{O}{\|}}{C}-CH_3$						
11	–ONO						
12	$-O-NO_2$						
13	$-SO_3H$						
14	$-O-\overset{\overset{O}{\|}}{\underset{\underset{O}{\|}}{S}}-O-R$						
15	$-\overset{\overset{O}{\|}}{\underset{\underset{O}{\|}}{S}}-O-R$						
16	–NO						
17	–F						
18	–Cl						
19	–Br						

S.No.	Species	+ I	– I	+ m	– m	+ H.C.	– H.C.
20	–I						
21							
22							
23	–S–R						
24							
25							
26							
27	$-CH_3$						
28							
29	$-CMe_3$						
30	$-CF_3$						
31	$-CCl_3$						
32	–Ph						
33	$-CH=CH_2$						
34	–COOH						
35	$-O-CH_3$						
36							
37							
38							
39							
40	$-CR_2$						

ANSWER KEY
(ORGANIC CHEMISTRY)

ORGANIC CHEMISTRY

DPP No. # 1

1. (C) **2.** (C) **3.** (C) **4.** (D) **5*.** (BCD) **6*.** (ABD) **7.** 9 **8.** (A → p, s) ; (B → p, q) ; (C → r, s) ; (D →p)

DPP No. # 2

1. (B) **2.** (C) **3.** (D) **4.** (D) **5.** (B)

6. (A,B) **7.** 114. **8.** A → S, B → P, C → Q, D → R

DPP No. # 3

1. (C) **2.** (C) **3.** (A) **4.** (D)

5.* (A,B,D) **6.*** (A,B,C,D)

7. $H_2C = C = CH_2$

M. W. = 40.

8. [A – s] ; [B – q] ; [C – p] ; [D – r]

DPP No. # 4

1. (A) **2.** (D) **3.** (C) **4.** (B)

5. (B,C,D) **6.** (B,C,D) **7.** 6

8. **(a)** (B) **(b)** (C) **(c)** (D)

DPP No. # 5

1. (C) **2.** (A) **3.** (A) **4.** (A) **5.*** (A, D) **6.** **(a)** (C) **(b)** (C) **8.** (P → Z) ; (Q → Y) ; (R → W) ; (S → X).

DPP No. # 6

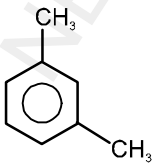
1. (B) **2.** (B) **3.** (B) **4.** (C)

5. (ABCD) **6.** (ABC) **8.** (A → s) ; (B → r) ; (C → q) ; (D → p)

DPP No. # 7

1. (B) **2.** (D) **3.** (A) **4.** (A) **5.** (C)

6. (B C) **7.** (ABCD)

8. (a)  (b)  (c) $\begin{matrix} CH_2-COOH \\ | \\ CH_2-COOH \end{matrix}$ (d) $CH_3-\underset{\displaystyle OH}{\underset{|}{CH}}-COOH$

DPP No. # 8

1. (B) **2.** (C) **3.** (B) **4.** (B) **5.** (D)

6. **(a).** (C) **(b).** (A) **8.** (A → q) ; (B → s) ; (C → p) ; (D → r)

DPP No. # 9

Hyb. : sp^3 sp^3 sp^3
1. $CH_3—CH_2—CH_3$
B. A 109° 109° 109°

Hyb. sp^3 sp^2 sp^2
2. $CH_3—CH=CH_2$
B. A 109° 120° 120°

Hyb.: sp^3 sp sp
3. $CH_3–C\equiv CH$
B. A 109° 180° 180°

Hyb. : sp^2 sp^2 sp^2 sp^2
4. $CH_2=CH—CH=CH_2$
B. A 120° 120° 120° 120°

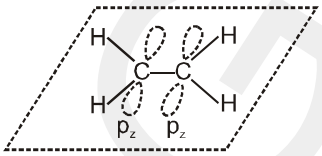
Hyb. : sp^2 sp^2 sp sp
5. $CH_2=CH—C\equiv CH$
B. A 120° 120° 180° 180°

Hyb. : sp^2 sp sp^2
6. $CH_2=C=CH_2$
B. A 120° 180° 120°

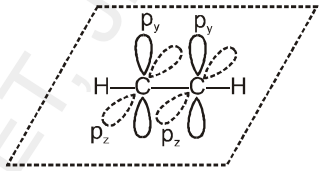
Hyb. : sp^2 sp^2 sp^3 sp^2 sp sp^2
7. $CH_2=CH—CH_2—HC=C=CH_2$
B. A 120° 120° 109° 120° 180° 120°

2.

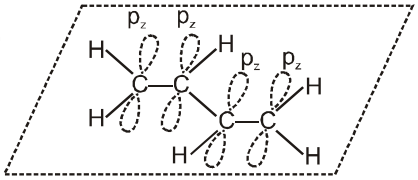
1.



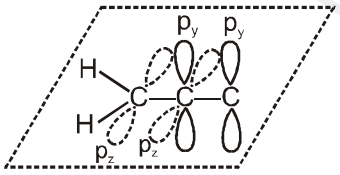
2.



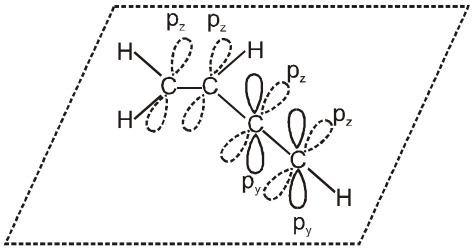
3.



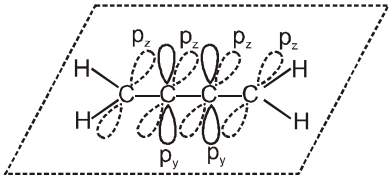
4.



5.



6.



DPP No. # 10

1.	(D)	**2.**	(B)	**3.**	(C)	**4.**	(C)	**5.**	(B)
6.	(C)	**7.**	(C)	**8.**	(C)	**9.**	(C)	**10.**	(C)

11. (C) **12.** (A) **13.** (C) **14.** (D) **15.** (C)

16. **(a)** (i) 12, (ii) 6. **(b)** (i) 12, (ii) 8. **(c)** (i) 12, (ii) 8. **(d).** (i) 6, (ii) 4.

(e) (i) 14, (ii) 8. **(f)** (i) 14, (ii) 9.

DPP No. # 11

1. (A) **2.** (C) **3.** (A) **4.** (C) **5.** (C)

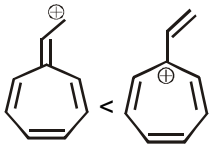
6.* (ABD)

7. Inductive effect is expected to be the least in the bond between cabon 3 and carbon 2. **8.** 6

DPP No. # 12

1.* (ABCD) **2.*** (ABC) **3.*** (ACD) **4.** (B) **5.** (D)

6.* (ABD)

7. (A – q) ; (B – p) ; (C – r) **8.** (a) $\overset{\oplus}{C}H_2 - NH_2 < CH_2 = \overset{\oplus}{N}H_2$; (b)  <

DPP No. # 13

1. (B) **2.** (B) **3.** (C) **4.** (D) **5.** (B)

6. (A) **7.** (A) – p,q,t ; (B) – p,q,s (C) – p (D) – p,q,r,s **8.** (a) 5 (b) 3

DPP No. # 14

1.* (ABC) **2.** (A) **3.*** (A,D) **4.** (A) **5.** (C)

6. (C) **7.** (A $\rightarrow$ p, q), (B $\rightarrow$ p), (C $\rightarrow$ p, q, r, s), (D $\rightarrow$ p, r) **8.** 7

DPP No. # 15

1. (D) **2.** (B) **3.** (BCD)

4. (A - p,s) ; (B - p,s) ; (C - p,s) ; (D - r) **5.** 3 **6.** 2

GGSRDN

Educational Services Private Limited

9th, 10th, NEET, JEE(Main/Advanced)

अभ्यास ही सबसे बड़ा गुरू है।

CLASS : XI

(ORGANIC CHEMISTRY)

DPP

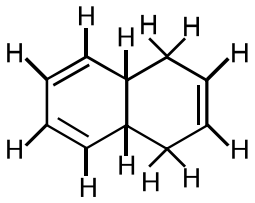
DAILY PRACTICE PROBLEM

Solutions

DPP-1 to 16

DPP No. # 1

1.

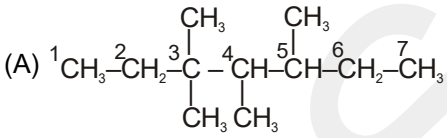


DPP No. # 2

8. (A) $CH_3–CH_2–CH_2–CH_3$
M.F = C_4H_{10} = 48 + 10 = 58
(B) HC º CH
M.F. ® C_2H_2 = 24 +2 = 26
(C) $CH_3–CH = CH_2$
M.F. ® C_3H_6 = 36 +6 = 42
(D) $CH_3–C$ º CH
M.F. ® C_3H_4 = 36 +4 = 40

DPP No. # 3

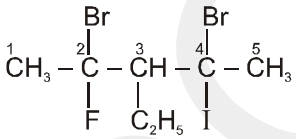
3. (A)



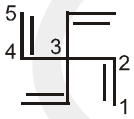
Lowest set of Locant (3, 3, 4, 5)

DPP No. # 4

1.



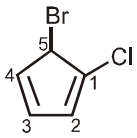
4.



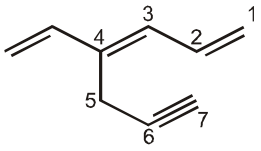
Diethenyl pentadiene

5.* 3,4–Dimethylhex–3–ene

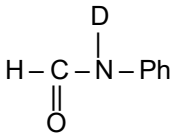
6.* is 1,6-Dichlorocyclohex-1-ene not 2,3–dichloro cyclohex-1-ene.

7. 

5-Bromo-1-chlorocyclopenta-1,3-diene

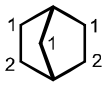
8. **(a)** 

DPP No. # 5

1. 

N-Deutero-N-phenylmethanamide.

6.

(a) 

Bicyclo [2. 2. 1] heptane

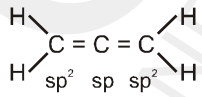
(b)  is bicyclo [1. 1. 0] butane.

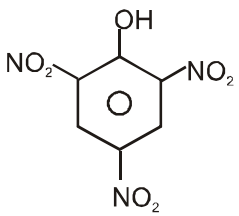
7. (i) 3-Bromo-4-methylpentane-2-sulphonic acid
(ii) 5–Bromo–6–chlorocyclohex–2–ene–1–carboxylic acid
(iii) 4-Methylbenzene-1-sulphonic acid
(iv) Methylenecyclohexane

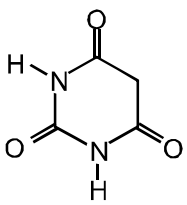
DPP No. # 6

7. (i) Functional isomer (ii) Functional isomer (iii) Functional isomer
(iv) Metamer (v) Position isomer (vi) Functional isomer

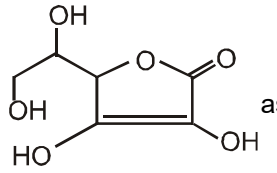
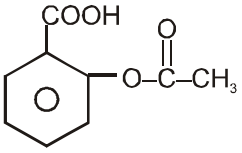
DPP No. # 7

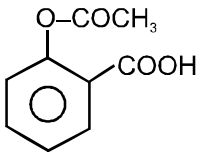
1. C_3H_4 

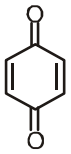
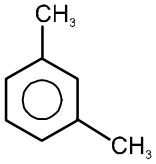
2. 

picric acid ; 

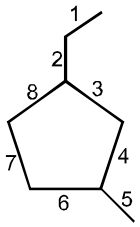
barbituric acid

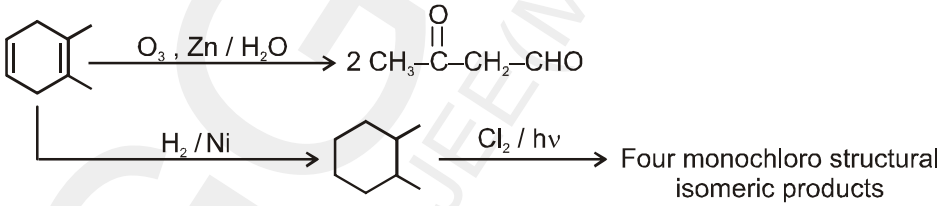

ascorbic acid ;

aspirin

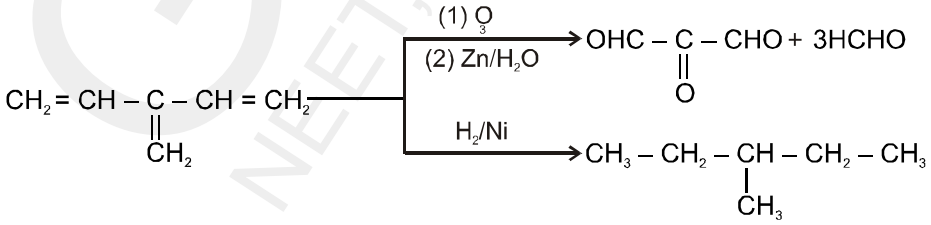
3. 
Aspirin (Acetyl salicylic acid)

8. (a) 
(b) 
(c) $\begin{matrix} CH_2-COOH \\ | \\ CH_2-COOH \end{matrix}$
(d) $\begin{matrix} CH_3-CH-COOH \\ | \\ OH \end{matrix}$

DPP No. # 8

2. 

5. 

6. 

7. $H_3C-CH=\underset{CH_2-CH_3}{\underset{|}{C}}-CH_2-CH_2-CH=\underset{CH_3}{\underset{|}{C}}-CH_2-CH_2-CH_3$

DPP No. # 9

1.

Hyb. : sp^3 sp^3 sp^3

1. $CH_3—CH_2—CH_3$

B. A 109° 109° 109°

Hyb. sp^3 sp^2 sp^2

2. $CH_3—CH=CH_2$

B. A 109° 120° 120°

Hyb.: sp^3 sp sp

3. $CH_3-C\equiv CH$

B. A 109° 180° 180°

Hyb. : sp^2 sp^2 sp^2 sp^2

4. $CH_2=CH—CH=CH_2$

B. A 120° 120° 120° 120°

Hyb. : sp^2 sp^2 sp sp

5. $CH_2=CH—C\equiv CH$

B. A 120° 120° 180° 180°

Hyb. : sp^2 sp sp^2

6. $CH_2=C=CH_2$

B. A 120° 180° 120°

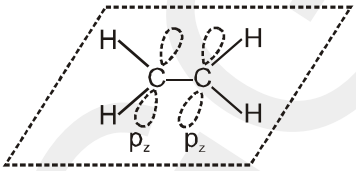
Hyb. : sp^2 sp^2 sp^3 sp^2 sp sp^2

7. $CH_2=CH—CH_2—HC=C=CH_2$

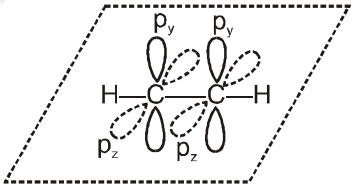
B. A 120° 120° 109° 120° 180° 120°

2.

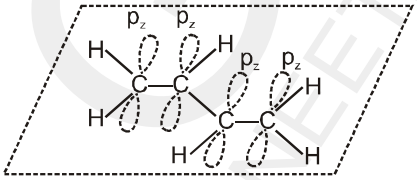
1.



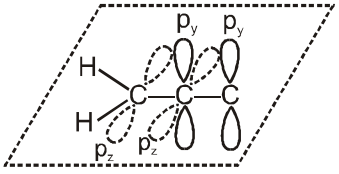
2.



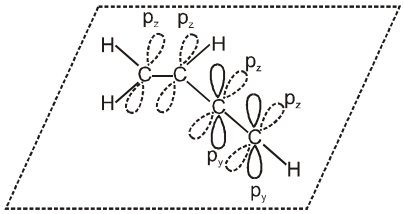
3.



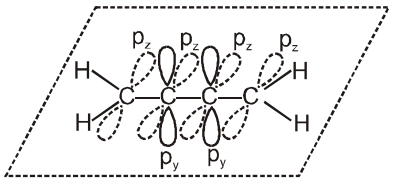
4.



5.



6.



DPP No. # 11

2. ex. $\overset{\delta+}{CH_3} \rightarrow \overset{\delta+}{CH_2} \rightarrow \overset{\delta-}{Cl}$

3. Case A has incorrect direction of I-effect.

4. Maximum – I effect – Cl.

5. Self explanatory.

6. Self explanatory.

7. Magnitude of inductive effect diminisnes as the number of intervening bonds increases. Hence, the effect is least in the bond between cabon 3 and carbon 2.

DPP No. # 12

1. (A,B,C,D)
Due to delocalization of paired & unpaired p-orbital electrons

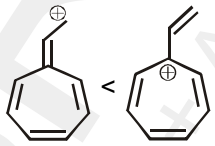
2. (A,B,C,) $CH_2 = C = C = CH_2 \longleftrightarrow \overset{\oplus}{C}H_2 - C \equiv C - \overset{\ominus}{C}H_2$

$\longleftrightarrow \overset{\ominus}{C}H_2 - C \equiv C - \overset{\oplus}{C}H_2$

3. **Lone pair of electrons of** $H_2C = \dot{\ddot{N}} - CH_3$ **is in sp² hybrid orbital.**
$H_2C = \dot{\ddot{N}} - CH_3$ dk ,dkdh bysDV^{a}kWu ;qXe **sp²** ladfjr d{kd esa gSA

6.* (C) $CH_3 - \underset{(I)}{\overset{\oplus}{C}} = O \longleftrightarrow CH_3 - C \equiv \underset{(II)}{\overset{\oplus}{O}}$
Stability II > I due to No. of π bonds.

7. (A – q) ; (B – p) ; (C – r)

8. (a) $\overset{\oplus}{C}H_2 - NH_2 < CH_2 = \overset{\oplus}{N}H_2$; (b) 

DPP No. # 13

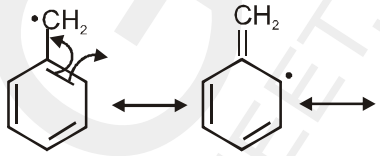
1. Self explanatory

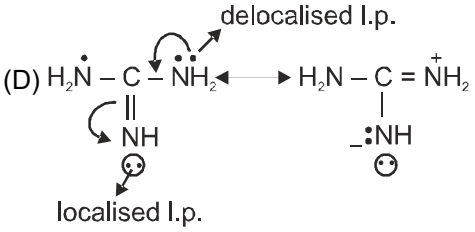
2. **(Moderate)** There are unpaired electrons, others have no unpaired electrons.

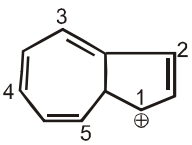
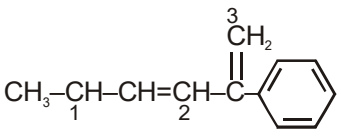
3. $-\overset{\ominus}{O} > -NH_2 > -OH > -NH-CO-CH_3$

6. Due to delocalization of π electron in benzene.

7. (A) $\overset{\oplus}{C}H_2 - CH = CH_2 \longleftrightarrow CH_2 - CH = \overset{+}{C}H_2$ (B) $\dot{\ddot{N}}H_2 - CH = CH_2 \longleftrightarrow \overset{\oplus}{N}H_2 = CH - \overset{\ominus}{C}H_2$
delocalised l.p.

(C) 

(D) 

8. (a)  (b) 

DPP No. # 14

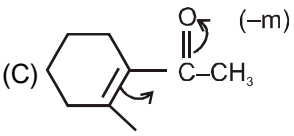
3. (A,D) —CH_3 (H.C.& + I)
— O CH_3 (+M> – I)

4. $CH_3 — CH = CH — CH = CH — CH_3$

(A) reso + H.C.

$> C = C <$ bond order ↓ as, bond lenght ↑ $\alpha\sigma$

5. (C)



(H .C.> + I)

DPP No. # 15

1. (D) Due to +m order

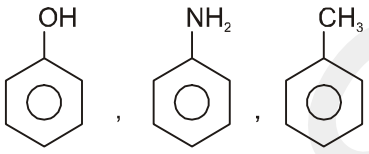
$$-\overset{\ominus}{O} > -\overset{..}{\underset{..}{O}}CH_3 > -O-\overset{O}{\overset{\|}{C}}-CH_3 > -\overset{O}{\overset{\|}{C}}-O-\overset{O}{\overset{\|}{C}}-CH_3$$

2. Rate of electrophilic substitution reaction $\propto$ Stability of arenium ion.

4. Aromatic → planar, cyclic , $(4n+2)\ \pi e^{\ominus}$, complete conjugation

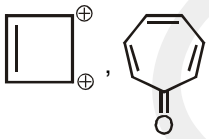
Antiaromatic → planar, cyclic , $(4n)\ \pi e^{\ominus}$, complete conjugation

Non aromatic– cyclic structure with non-planar geometry with any hybridization

5. 

are more reactive than benzene towards electrophilic substitution.

6. Aromatic species are

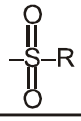


7. Inductive effect is permanent displacement of shared pair of electron along the chain of carbon atom due to presence of polar covalent bond.

Electromeric effect is a temporary effect. It is defined as the complete transfer of a shared pair of π-electrons to one of the atoms joined by a multiple bond on the demand of an attacking reagent.

8. (a) $H_3C – Br$ (b) $H_3C – OH$ (c) $H_3C – OH$

DPP No. # 16

23	–S–R		✓	✓	✓		
24			✓		✓		
25	$-\overset{\oplus}{P}R_3$		✓		✓		
26	$-\overset{\oplus}{N}R_3$		✓				
27	$-CH_3$	✓				✓	
28	$-\overset{\oplus}{S}R_2$		✓		✓		
29	$-CMe_3$	✓					
30	$-CF_3$		✓				✓
31	$-CCl_3$		✓				✓
32	–Ph		✓	✓	✓		
33	$-CH=CH_2$		✓	✓	✓		
34	–COOH		✓		✓		
35	$-O-CH_3$		✓	✓			
36	$-\ddot{O}H$		✓	✓			
37	$-\ddot{N}H_2$		✓	✓			
38			✓	✓			
39	$-\ddot{\overset{\ominus}{C}}R_2$	✓		✓			
40	$-\overset{\oplus}{C}R_2$		✓		✓		