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TARGET : JEE (Main + Advanced) 2022

Course : VIKAAS(JA)

O/I-CHEMISTRY

DPP

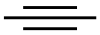
DAILY PRACTICE PROBLEMS

NO. A1

DPP No. # A1 (JEE-MAIN)

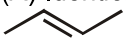
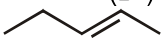
Total Marks: 60 | **Max. Time: 33 min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.12 | **(3 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.13 to Q.15 | **(3 marks, 3 min.)**

1. Which of the following is saturated hydrocarbon?
निम्न में से कौनसा संतृप्त हाइड्रोकार्बन है।

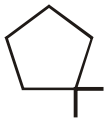
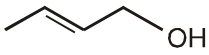
(A) (B) (C)  (D*)

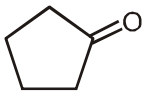
2. Carbon has strong tendency to show catenation due to :
(A) Its tetravalency (B) small size
(C) Its high C–C bond energy (D*) All of these
कार्बन में प्रबलतम श्रृंखलन का गुण पाया जाने का कारण है :
(A) उसकी चतुसंयोजकता (B) छोटा आकार
(C) इसकी अधिकतम C–C बंध ऊर्जा (D*) उपरोक्त सभी

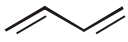
3. Which of the following is the empirical formula of C_6H_6 ?
(A*) CH (B) C_2H_2 (C) C_6H_6 (D) none of these
C_6H_6 का मूलानुपाती सूत्र निम्न में से कौन है ?
(A*) CH (B) C_2H_2 (C) C_6H_6 (D) इनमें से कोई नहीं

4. and are :
(A) Identical (B*) Homologous (C) Alkane (D) Saturated hydrocarbon
 तथा  है :
(A) समरूप (B*) समजात (C) ऐल्केन (D) संतृप्त हाइड्रोकार्बन

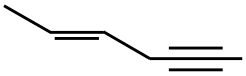
5. Which of the following is unsaturated hydrocarbon ?
निम्न में से कौन असंतृप्त हाइड्रोकार्बन है ?

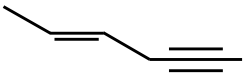
(A)  (B) 

(C) 

(D*) 

6. Which of the following is third member of C_nH_{2n-2} homologous series ?
C_nH_{2n-2} वाली समजात श्रेणी का तीसरा सदस्य कौनसा है ?
(A) C_2H_2 (B) C_3H_4 (C*) C_4H_6 (D) C_4H_8

7. Which of the following is molecular formula of  ?

 का आण्विक सूत्र कौनसा है ?

(A) C_7H_{14} (B) C_7H_{12} (C*) C_7H_{10} (D) C_7H_8

8. How many π and σ bond are present in $CH_2=CH–CH_2–C\equiv CH$

(1*) 10 σ, 3 π (2) 8 σ, 3 π (3) 3 σ, 10 π (4) 12 σ, 3 π

$CH_2=CH–CH_2–C\equiv CH$ में कितने π तथा σ बन्ध उपस्थित हैं ?

(1*) 10 σ, 3 π (2) 8 σ, 3 π (3) 3 σ, 10 π (4) 12 σ, 3 π

9. How many σ and π-bonds are there in tetracynoethylene $(CN)_2C=C(CN)_2$ molecule.
टेट्रा सायनोएथीलीन $(CN_2)C=C(CN)_2$ अणु में कितने σ तथा π-बन्ध है।

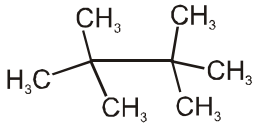
(1*) 9 σ, 9 π (2) 9 σ, 7 π (3) 5 σ, 9 π (4) 5 σ, 7 π

10. Which of the following alkanes contain primary, secondary, tertiary and quaternary carbon atoms together?
निम्न में से किस एल्केन में प्राथमिक, द्वितियक तृतीयक और चतुष्क कार्बन परमाणु उपस्थित है ?

(1) $(CH_3)_3CH$ (2) $(C_2H_5)_3CH$
(3*) $(CH_3)_3CCH_2CH(CH_3)_2$ (4) $(CH_3)_4C$

11. 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
कीटीन $CH_2=C=O$ में है :
(A) केवल sp^2 कार्बन परमाणु (B) केवल sp कार्बन परमाणु
(C*) sp^2 तथा sp कार्बन परमाणु (D) sp^3, sp^2 तथा sp कार्बन परमाणुं

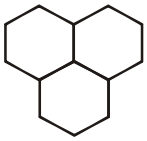
12. Number of primary hydrogen is the given compound are
दिये गये यौगिक में प्राथमिक H की संख्या है।



(A) 10 (B*) 18 (C) 14 (D) 16

13. Total number of bonds in $HC\equiv C–C\equiv CH$ **?**
$HC\equiv C–C\equiv CH$ में कुल बन्धों की संख्या है ?

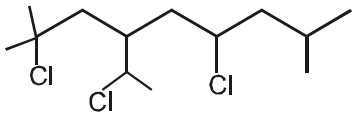
Ans. **9**

14. 

How many hydrogen atoms are present in the given structure ?
दी गयी संरचना में कितने हाइड्रोजन परमाणु उपस्थित है।

Ans. **22**

15. Number of secondary halogen in the given compound are
दिये गये यौगिक में द्वितीयक हैलोजन की संख्या है।



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

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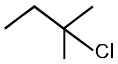
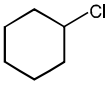
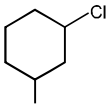
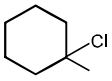
Course : VIKAAS(JA)

O/I-CHEMISTRY
DPP
DAILY PRACTICE PROBLEMS
NO. A2

DPP No. # A2 (JEE-ADVANCED)

Total Marks: 42 **Max. Time: 26 min.**
Multiple choice objective ('–1' negative marking) Q.1 to Q.7 **(4 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.8 to Q.9 **(3 marks, 3 min.)**
Match the Following (no negative marking) Q.10 **(8 marks, 6 min.)**

1. Which of following is/are 3º chloride:
निम्न में से कौनसे 3º क्लोराईड है/हैं ?

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

2. The alicyclic compound/s is / are :
एलिसाइक्लिक यौगिक है/हैं :

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

3. 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

समजातीय श्रेणी के लिए कौनसे विकल्प सही है?
(A*) सभी सदस्य का सामान्य सूत्र समान होता है।
(B*) सभी सदस्यों के रासायनिक गुण समान होते हैं।
(C) सभी सदस्यों के भौतिक गुण समान होते हैं।
(D*) सभी सदस्यों के क्रियात्मक समूह समान होते हैं।

4. What is correct about and ?

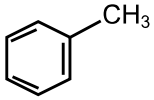
(A*) both have same empirical formula
(B*) both have same general formula
(C*) both have same molecular formula
(D) both are homologous

तथा के लिए सत्य क्या है?
(A*) दोनो समान मूलानुपाती सूत्र रखते है।
(B*) दोनो समान सामान्य सूत्र रखते है।
(C*) दोनो समान अणु सूत्र रखते है।
(D) दोनो समजात है।

5. How many of the following show general formula C_nH_{2n-6}?

निम्न में से कितने सामान्य सूत्र C_nH_{2n-6} दर्शाते हैं ?

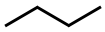
(A*) H–C≡C–C≡C–CH_3 (B) CH_2=C=C=CH_2

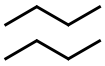
(C*) 

(D) H–C≡C–H

Sol. (A) $C_5H_{10-6} = C_5H_4$
(C) $C_7H_{14-6} = C_5H_8$

6. Which of the following is/are alicyclic hydrocarbon
निम्न में से कौनसा एलिसाइक्लिक हाइड्रोकार्बन नहीं है –

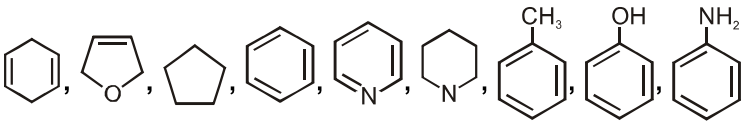
(A*) (B)  (C*) (D*)

Sol.  is not an alicyclic hydrocarbon. It is an acyclic hydrocarbon.
एलिसाइक्लिक हाइड्रोकार्बन नहीं है। यह एक अचक्रिय हाइड्रोकार्बन है।

7. Which molecules have sp^3 carbon atom :
निम्न में से कौनसा अणु sp^3 संकरित कार्बन रखता हैं :

(A*) (B*) (C) HC≡C–CH=CH_2 (D*) H–C≡C–CH_3

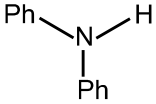
8. In the given compounds how many are unsaturated hydrocarbon?
निम्न में से कितने यौगिक असंतृप्त हाइड्रोकार्बन है?

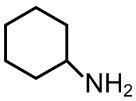


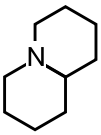
Ans. **3**

9. How many amines are tertiary amines:
कितने एमीन तृतीयक एमीन हैं ?

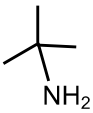
(1)

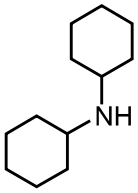
(2) 

(3) Ph–NH_2 (4) Ph_3N (5) 

(6) 

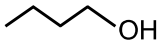
(7)

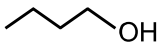
(8) 

(9) 

Ans. 3
Sol. 1, 4, 6

10. **Match the following :**

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

	कॉलम-I (यौगिक)		कॉलम-II (यौगिक का वर्गीकरण)
(A)		(p)	असंतृप्त यौगिक
(B)		(q)	विषमचक्रीय यौगिक
(C)		(r)	असंतृप्त यौगिक
(D)		(s)	हाइड्रोकार्बन

Ans. (A $\rightarrow$ p, s) ; (B $\rightarrow$ p, q) ; (C $\rightarrow$ r, s) ; (D $\rightarrow$p)

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Course : VIKAAS(JA)

O/I-CHEMISTRY
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NO. A3

DPP No. # A3 (JEE-MAIN)

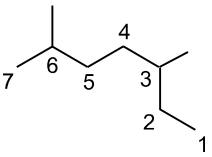
Total Marks: 42 **Max. Time : 31 min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.11 **(3 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.12 to Q.14 **(3 marks, 3 min.)**

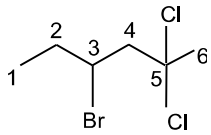
1. In the organic compound $\overset{1}{C}H_2=\overset{2}{C}H-\overset{3}{C}H_2-\overset{4}{C}H_2-\overset{5}{C}H=\overset{6}{C}H_2$, the pair of hybridised orbitals involved in the formation of C_2–C_3 bond is :

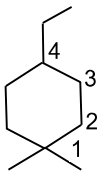
कार्बनिक यौगिक $\overset{1}{C}H_2=\overset{2}{C}H-\overset{3}{C}H_2-\overset{4}{C}H_2-\overset{5}{C}H=\overset{6}{C}H_2$ में कार्बन संख्या C_2–C_3 में कौनसे संकरित कक्षक सम्मिलित हैं:

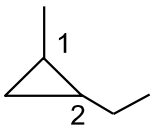
(A) sp–sp^2 (B) sp–sp^3 (C*) sp^2–sp^3 (D) sp^3–sp^3

2. Which of the following has correct numbering :
निम्न में से किसका अंकन सही दिया गया है ?

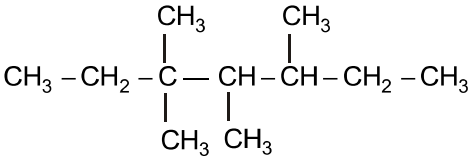
(1) 

(2) 

(3*) 

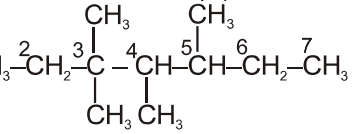
(4) 

3. In following compound -
निम्न यौगिक में –



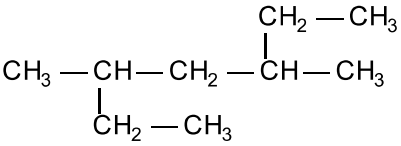
The correct lowest set of locants are :
निम्न में से कौनसा स्थानांको का न्यूनतम समुच्चय सही है ?

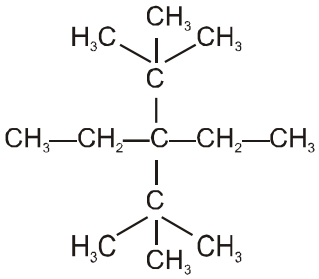
(A*) 3,3,4,5 (B) 3,4,5,5 (C) 4,5,3,3 (D) 5,5,4,3

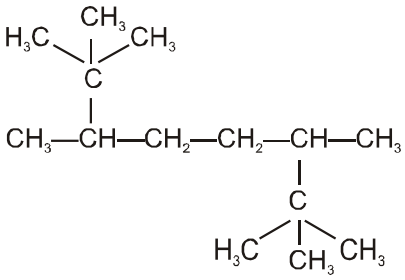
Sol. (A) 

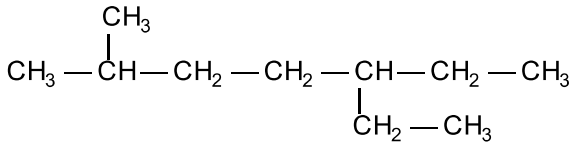
Lowest set of Locant (3, 3, 4, 5)

4. Which of the following has longest chain of carbon :
निम्न में से किसमें कार्बन की सर्वाधिक लम्बी श्रृंखला है :

(A) 

(B) 

(C*) 

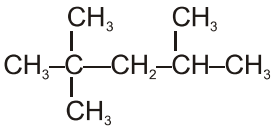
(D) 

5. Which of the following is 3º chloride?
निम्न में से कौनसा 3º क्लोराइड है?

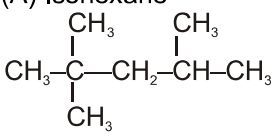
(A) $CH_3–CH_2–Cl$ (B) $(CH_3)_2CHCl$ (C*) $(CH_3)_3CCl$ (D) $(CH_3)_3CCH_2Cl$

6. What is the correct IUPAC name of $(C_2H_5)_4C$ is:
(A) Tetraethyl methane (B*) 3,3-Diethyl pentane
(C) Triethylethane (D) Octane
$(C_2H_5)_4C$ का सही IUPAC नाम क्या है ?
(A) टेट्राऐथिल मेथेन (B*) 3,3-डाइऐथिल पेन्टेन (C) ट्राइऐथिल ऐथेन (D) ऑक्टेन

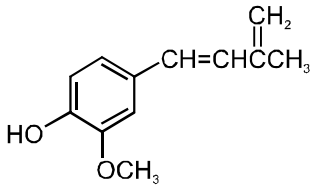
7. Which of the following are used as primary suffix :
(A) Bromo (B) Nitro (C) Methoxy (D*) –ene
निम्न में कौन प्राथमिक अनुलग्न के रूप में प्रयुक्त होता है :
(A) ब्रोमों (B) नाइट्रो (C) मिथोक्सी (D*) –ईन

8. The name of  is :

(A) Isohexane (B*) 2,2,4-Trimethylpentane (C) Neoocatne (D) Isoheptane

 निम्न यौगिक का नाम है :

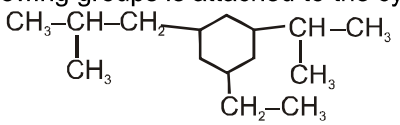
(A) आइसोहैक्सेन (B*) 2,2,4- ट्राईमेथिलपेन्टेन (C) नियोऑक्टेन (D) आइसोहेप्टेन

9. 

What is incorrect about the given structure?
दी गई संरचना के बारे में असत्य कथन है?

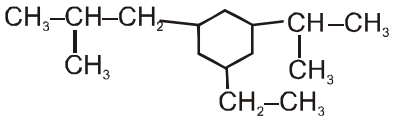
(A) It has six D.U.
(B) It has ten sp^2 hybrid C-atom
(C) It has ten sp^2–sp^2 C–C σ bond
(D*) All are incorrect.
(A) इसका D.U. छः है।
(B) यह दस sp^2 संकरित C-परमाणु रखता है।
(C) यह दस sp^2–sp^2 C–C σ बंध रखता है।
(D*) सभी कथन गलत है।

10. Which of the following groups is attached to the cyclohexane ring in the following compound.



(A) Methyl (B) n-Propyl (C*) Iso-propyl (D) Neo-pentyl

निम्न यौगिक में निम्न में से कौन सा समूह साइक्लोहेक्सेन वलय से जुडा है –

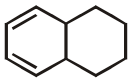


(A) मेथिल (B) n-प्रोपिल (C*) आइसोप्रोपिल (D) नियोपेंटिल

11. Which of the following alkyl group are possible from Iso-butane ?
(A) Iso-Butyl & n-butyl
(B) Sec. butyl & Ter. butyl
(C) n-butyl & Ter. butyl
(D*) Iso-butyl & Ter. butyl

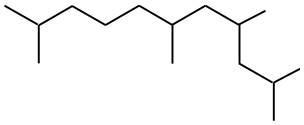
निम्न से कौन से एल्किल समूह आइसोब्युटेन से सम्भव हैं
(A) आइसोब्यूटिल व n-ब्यूटिल
(B) द्वितीयक ब्यूटिल व तृतीयकब्यूटिल
(C) n-ब्यूटिल व तृतीयक ब्यूटिल
(D*) आइसोब्यूटिल व तृतीयक ब्यूटिल

12. Number of sp^2 – sp^2 C-C σ-bond in the given compound are :
दिये गये यौगिक में हाइड्रोजन परमाणुओं की संख्या है।



Ans. 3

13. How many carbon atoms are present in the principle chain of following compound .
नीचे दिये गये यौगिक की मुख्य श्रृंखला में कितने कार्बन परमाणु मौजुद हैं।



Ans. 11

14. How many 1° hydrogens are present in Iso-octane:
आइसो–ऑक्टेन में कितने 1° हाइड्रोजन उपस्थित है?

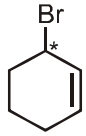
Ans. 15

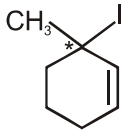
ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **Allylic / Vinylic / Benzylic**

(i) Allylic Compounds: In these compounds monovalent functional group is linked to sp^3 – hybridised carbon atom which is next to carbon-carbon double bond, i.e. to an allylic carbon. These may be further classified as 1°, 2° or 3°.

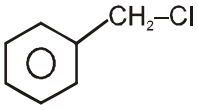
$CH_2=CH-\overset{*}{C}H_2-Cl$
1° Allylic chloride

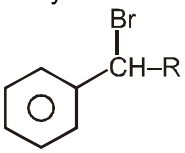

2°-Allylic bromide

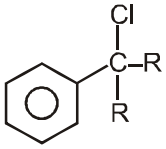

3°-Allylic iodide

Note : * represents allylic carbon.

(ii) Benzylic Compounds : In these compounds, monovalent functional group is attached to a sp^3-hybridized carbon atom next to an aromatic ring i.e. to a benzylic carbon. These may be further classified as 1°, 2°, 3°.


1°-Benzylic chloride

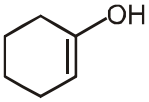

2°-Benzylic bromide


3°-Benzylic chloride

(iii) Vinylic Compounds : In these compounds, the monovalent functional group is attached to one of the carbon atoms of the carbon - carbon double bond.

$CH_2 = CH - Cl$
Vinylic chloride

Note : The compounds which have double bond and OH group on same carbon are unstable hence vinylic alcohol are unstable.


Vinylic alcohol
(generally unstable)

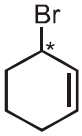
$CH_3-CH=CH-OH$
Vinylic alcohol
(generally unstable)

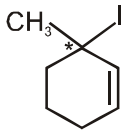
ChemINFO IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry **Allylic / Vinylic / Benzylic**

(i) एलिलिक यौगिक : इन यौगिकों में एकल संयोजी क्रियात्मक समूह उस sp^3– संकरित कार्बन परमाणु से जुड़ा होता है जो आगे की ओर कार्बन कार्बन द्विबंध अर्थात् एलिलिक कार्बन रखता है। इन्हें भी 1°, 2° या 3° में वर्गीकृत किया गया है।

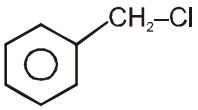
$CH_2=CH-\overset{*}{C}H_2-Cl$
1° एलिलिक क्लोराइड

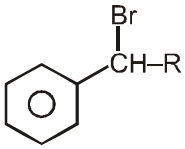

2°-एलिलिक ब्रोमाइड

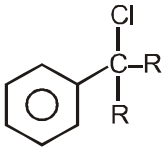

3°-एलिलिक आयोडाइड

नोट : * प्रदर्शित एलिलिक कार्बन।

(ii) बेन्जाइलिक यौगिक : इन यौगिकों में एकल संयोजी क्रियात्मक समूह उस sp^3-संकरित कार्बन परमाणु से जुड़ा होता है जो बेन्जीन से वलय अर्थात् बेन्जाइलिक कार्बन से जुड़ा होता है। इन्हे भी 1°, 2°, 3° में वर्गीकृत किया गया है।


1°-बेन्जाइलिक क्लोराइड

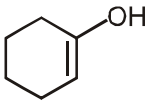

2°-बेन्जाइलिक ब्रोमाइड


3°-बेन्जाइलिक क्लोराइड

(iii) विनायलिक यौगिक : इन यौगिकों में एकल क्रियात्मक समूह कार्बन–कार्बन द्विबंध के किसी एक कार्बन से जुड़ा होता है।

$CH_2 = CH - Cl$
विनायलिक क्लोराइड

नोट : यौगिक जिनमें समान कार्बन पर द्विबंध तथा OH समूह पाया जाता है, वे अस्थायी होता है। अतः विनायलिक एल्कोहॉल अस्थायी होता है।


विनायलिक एल्कोहॉल
(सामान्यता अस्थायी)

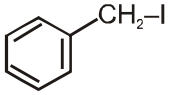
$CH_3-CH=CH-OH$
विनायलिक एल्कोहॉल
(सामान्यता अस्थायी)

Memorize this theory as soon as you get the DPP. Revize it regularly and master this concept by practice.

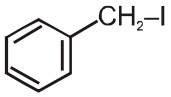
(i). Which of the following compound is unstable
निम्न में से कौनसा यौगिक अस्थायी है :
(A) $CH_3–CH=CH–Cl$ (B) $CH_2=CH–CH_2–OH$ (C) $CH_2=CH–CH_2–Cl$ (D*) $CH_3–CH=CH–OH$

(ii). $CH_2=CH–Br$ is a/an
(A) Allylic bromide (B) Benzylic bromide (C*) Vinylic bromide (D) All of these
$CH_2=CH–Br$ का नाम है :
(A) एलिलिक ब्रोमाइड (B) बेन्जाइलिक ब्रोमाइड (C*) विनायलिक ब्रोमाइड (D) उपरोक्त सभी

(iii). Which of the following statement is / are correct for following compound



(A) It is an allylic iodide (B) It is a vinylic iodide
(C) It is 2° benzylic iodide (D*) It is 1° benzylic iodide
निम्न यौगिक के लिए कौनसा कथन सही है/हैं



(A) यह एक एलिलिक आयोडाइड है। (B) यह एक विनायलिक आयोडाइड है
(C) यह एक 2° बेन्जाइलिक आयोडाइड है। (D*) यह एक 1° बेन्जाइलिक आयोडाइड है।

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TARGET : JEE (Main + Advanced) 2022

Course : VIKAAS(JA)

O/I-CHEMISTRY

DPP

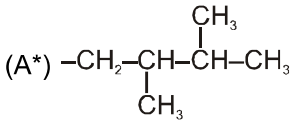
DAILY PRACTICE PROBLEMS

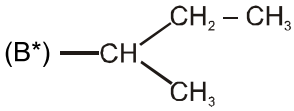
NO. A4

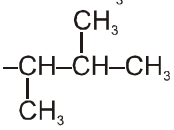
DPP No. # A4 (JEE-ADVANCED)

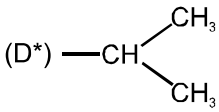
Total Marks : 43 **Max. Time : 25 min.**
Multiple choice objective ('–1' negative marking) Q.1 to Q.8 **(4 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.9 **(3 marks, 3 min.)**
Match the Following (no negative marking) Q.10 **(8 marks, 6 min.)**

1. Which of the following IUPAC names of alkyl radicals is/are correct :

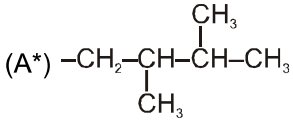
(A*)  is 2, 3-dimethylbutyl.

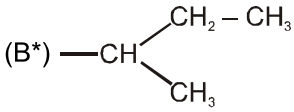
(B*)  is 1-methylpropyl

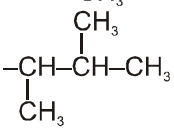
(C*)  is 1, 2-dimethylpropyl

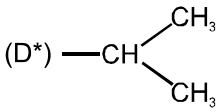
(D*)  is 1-methylethyl

निम्न में से कौनसे एल्किल मूलक का IUPAC नाम सही हैं :

(A*)  , 2, 3-डाइमेथिलब्यूटिल

(B*)  , 1-मेथिल प्रोपिल है।

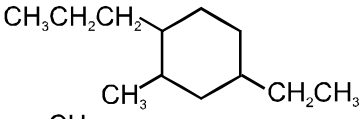
(C*)  , 1, 2-डाइमेथिलप्रोपिल है।

(D*)  , 1-मेथिलऐथिल है।

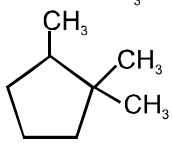
2. Which of the following IUPAC name is/are correct :

(A*)

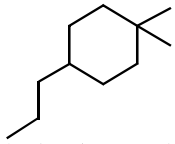
1- Ethyl-2-methylcyclopropane

(B*) 

4-Ethyl-2-methyl-1-propylcyclohexane

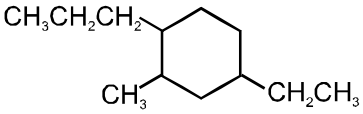
(C*) 

1,1,2-Trimethylcyclopentane

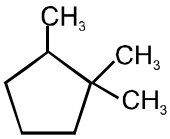
(D*)  1,1-Dimethyl-4-propylcyclohexane

निम्न में से कौनसा/कौनसे IUPAC नाम सही है :

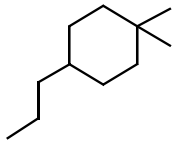
(A*) 1- एथिल-2-मेथिलसाइक्लोप्रोपेन

(B*) 

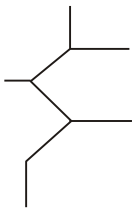
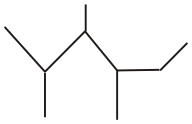
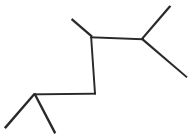
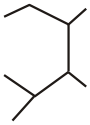
4-एथिल-2-मेथिल-1-प्रोपिलसाइक्लोहेक्सेन

(C*) 

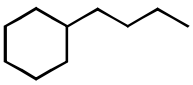
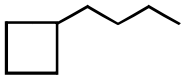
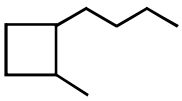
1,1,2-ट्राइमेथिलसाइक्लोपेन्टेन

(D*)  1,1-डाईमेथिल-4-प्रोपीलसाइक्लोहेक्सेन

3. The correct structure of 2,3,4-Trimethylhexane is :
2,3,4-ट्राइमेथिलहेक्सेन की सही संरचना होगी ?

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

4. In which of the following cyclic ring is a parent chain:
निम्न में से किस कार्बनिक यौगिक चक्रिय वलय पैतृक श्रृंखला है :

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

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

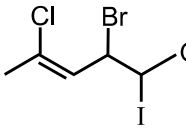
(A*) 1,1,1-Dimethyl ethane
(B*) 2- Methyl-3-ethylpentane
(C*) 3- Methyl-4-ethylhexane
(D) 3- Ethyl-4-methylhexane

निम्नलिखित में कौनसा/कौनसे गलत IUPAC नाम है?

(A*) 1,1,1- डाईमेथिल ऐथेन
(B*) 2- मेथिल-3-एथिलपेन्टेन
(C*) 3-मेथिल-4-एथिलहेक्सेन
(D) 3-एथिल-4-मेथिलहेक्सेन

6. Which of the following is/are correct ?

(A*) 1-buten-3-yne has 7 σ & 3π bonds

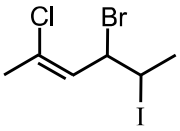
(B) Total number of substituent in  is 4.

(C*) $C_2(CN)_4$ has 9σ and 9π bonds.

(D*) Cyclohexane has only one type of carbon atoms.

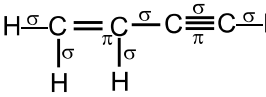
निम्न में से कौनसा/कौनसे सही है/हैं ?

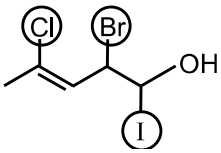
(A*) 1-ब्यूटीन-3-आइन 7 σ तथा 3π बंध रखता है।

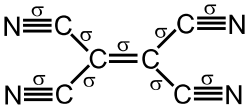
(B)  OH में प्रतिस्थापी की कुल संख्या 4 है।

(C*) $C_2(CN)_4$ 9σ तथा 9π बंध रखता है।

(D*) साइक्लोहेक्सेन केवल एक प्रकार का कार्बन परमाणु रखता है।

Sol. (A)  7σ, 3π

(B)  3 Substituent (प्रतिस्थापी)

(C)  9σ, 9π

(D) Cyclohexane has only 2º carbon atoms.

(D) साइक्लोहेक्सेन केवल 2º कार्बन परमाणु रखता है।

7. Which of the following is/are correct IUPAC Name ?
निम्नलिखित में से कौनसा/कौनसे सही IUPAC नाम है?

(A*) $CH_3–C(CH_3)_2 – CH_2–CH=CH_2$ — 4,4-Dimethylpent-1-ene 4, 4-डाईमेथिलपेन्ट -1-ईन

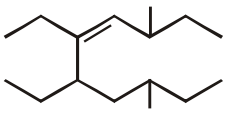
(B*) $CH_3CH_2C(Br) = CH – Cl$ — 2-Bromo-1-chlorobut-1-ene 2-ब्रोमो-1-क्लोरोब्यूट-1-इन

(C*) $CH_3–CH=C(CH_2–CH_2–CH_3)–CH_2–CH_3$ — 3-Ethyl-2-hexene 3-एथिल-2-हैक्सीन

(D*) $CH_2=CH—CH(C_2H_5)C(Br)=CH_2$ is ..... — 2-Bromo-3-ethylpenta-1,4-diene 2-ब्रोमो-3-एथिलपेन्टा-1,4-डाइईन

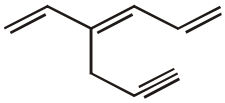
8. Which of the following is/are correct IUPAC Name ?
निम्नलिखित में से कौनसा/कौनसे सही IUPAC नाम है?

(A*) $CH_3–CH(C_2H_5)–CH=CH–CH_3$ — 4-Methylhex-2-ene 4-मेथिलहैक्स-2-ईन

(B*)  5,6-Diethyl-3,8-dimethyldec-4-ene

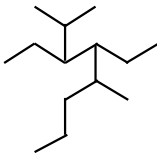
5,6-डाईएथिल-3,8-डाईमेथिलडेक-4-ईन

(C*) Diethenyl pentadiene डाईएथिनाइल पेन्टाडाइईन

(D*)  4-Ethenylhepta-1, 3-dien-6-yne

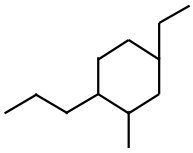
4-ऐथिनाइलहेप्टा-1, 3-डाईन-6-आइन

9. How many of following IUPAC names of given strutures are correct.
निम्न में से कितने IUPAC संरचना के नाम सही हैं। (1)



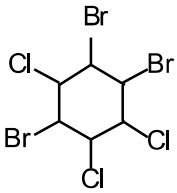
3,4-Diethyl-2,5-dimethyloctane

3,4-डाईएथिल-2,5-डाईमेथिलऑक्टेन

(2) 

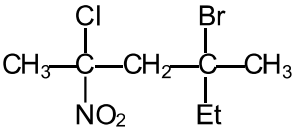
5-Ethyl-1-methyl-2-propylcyclohexane

5-एथिल-1-मेथिल-2-प्रोपिलसाइक्लोहेक्सेन

(3) 

1,2,4-Tribromo-3,5,6-trichlorocyclohexane

1,2,4-ट्राईब्रोमो-3,5,6-ट्राईक्लोरोसाइक्लोहेक्सेन

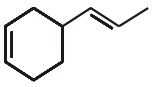
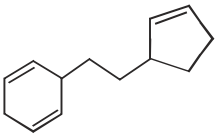
(4) 

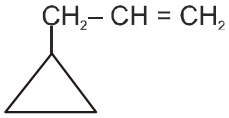
4-Bromo-2-chloro-4-methyl-2-nitrohexane

4-ब्रोमो-2-क्लोरो-4-मेथिल-2-नाइट्रोहेक्सेन

Ans. 3 (1 , 3 , 4)

10. Match the following : मिलान कीजिए।

Column I Compound यौगिक	**Column II** Degree of unsaturation असंतृप्तता की कोटि
(A) 	(P) 2
(B) $H_3C-CH(CH_3)-CH_2-C=CH_3$	(Q) 5
(C) 	(R) 4

(D) 

(S) 3

Sol. (A) → (S), (B) → (R), (C) → (Q), (D) → (P)

ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **Dienes, or diolefins or alkadienes**

Dienes or Diolefins or Alkadienes

Compounds containing two double bonds are called as dienes or diolefins. Dienes may be of three types.

(i) **Cumulative diene :** When the two double bonds are present on the adjacent carbon atoms, the diene is called as cumulative diene. Such sytem is found in allenes.

$CH_2 = C = CH_2$ — 1, 2-Propadiene (Allene)

$CH_3–CH=C=CH–CH_3$ — 2,3-Pentadiene (Dimethylalleine)

(ii) **Conjugated diene :** when the two double bonds are separated by one single bonds, the diene is called as conjugated diene.

$CH_2 = CH– CH = CH_2$ — 1,3-butadiene

$CH_2 = C(CH_3)– CH = CH_2$ — 2-methyl-1,3-butadiene

(iii) **Isolated diene :** When the two double bonds are separated by more than one single bond, the diene is called isolated diene.

$CH_2=CH–CH_2–CH=CH_2$ — 1,4-pentadiene

$CH_2=CH–CH_2–CH_2–CH=CH_2$ — 1,5-Hexadiene

ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **डाइईन, या डाइऑलिफिन या एल्काडाईन**

डाइईन, या डाइऑलिफिन या एल्काडाईन

एक अणु में दो द्विबन्ध युक्त यौगिक डाइईन या डाइऑलीन कहलाते हैं। डाइईन तीन प्रकार के हो सकते है –

(i) **संचयी डाइईन :** जब दो द्विबन्ध निकटवर्ती कार्बन परमाणु पर उपस्थित रहते है तो इस प्रकार के डाइईन का संचयी डाइईन कहते है। ऐसा तंत्र एलीन में पाया जाता है।

$CH_2 = C = CH_2$ — 1, 2-प्रोपेडाइन (एलीन)

$CH_3–CH=C=CH–CH_3$ — 2,3-पेन्टाडाईन (डाइमेथिल एलीन)

(ii) **संयुग्मी डाइईन :** जब दो द्विबन्ध एक बन्ध द्वारा पृथक होते है,ऐसे डाइईन को संयुग्मी डाईन कहते है।

$CH_2 = CH– CH = CH_2$ — 1,3-ब्यूटाडईन

$CH_2 = C(CH_3)– CH = CH_2$ — 2-मेथिल-1,3-ब्यूटाडाईन

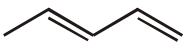
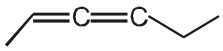
(iii) **विलगित डाइईन :** जब दो द्विबन्ध एक से अधिक एकल बन्धों द्वारा पृथक होते है, ऐसे डाइईन विलगित डाईन कहलाते है।

$CH_2=CH–CH_2–CH=CH_2$ — 1,4-पेन्टाडाईन

$CH_2=CH–CH_2–CH_2–CH=CH_2$ — 1,5-हेक्साडाईन

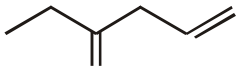
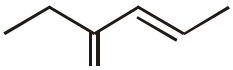
Memorize this theory as soon as you get the DPP. Revize it regularly and master this concept by practice.

(i). Which of the following compound is cumulative diene.
निम्न में से कौनसा यौगिक संचयी डाइईन युक्त है।

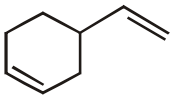
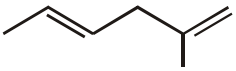
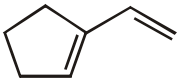
(A) 
(B)
(C*) 

(D)

(ii). Which of the following compound have conjugated diene
निम्न में से कौनसा यौगिक संयुग्मी डाइईन युक्त है।

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

(iii). Which of the following compound does not have isolated diene
निम्न में से कौनसा यौगिक विलगित डाइईन नहीं है।

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

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TARGET : JEE (Main + Advanced) 2022

Course : VIKAAS(JA)

O/I-CHEMISTRY
DPP
DAILY PRACTICE PROBLEMS
NO. A5

DPP No. # A5 (JEE-MAIN)

Total Marks: 45 **Max. Time: 33 min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.12 **(3 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.13 to Q.15 **(3 marks, 3 min.)**

1. The IUPAC name of $CH_3-\underset{\underset{NH_2}{|}}{CH}-CH_2CH=CH_2$ is :

(A*) Pent-4-en-2-amine
(B) 1-Methylbut-3-en-1- amine
(C) Pent-1-en-4-amine
(D) 4-Methylbut-1-en-4-amine

$CH_3-\underset{\underset{NH_2}{|}}{CH}-CH_2CH=CH_2$ का IUPAC नाम है :

(A*) पेन्ट-4-ईन-2-एमीन
(B) 1-मेथिलब्यूट-3-ईन-1- एमीन
(C) पेन्ट-1-ईन-4-एमीन
(D) 4-मेथिलब्यूट-1-ईन-4-एमीन

2. The compound 2-Ethylhex-2-ene-1-thiol has the structure :
यौगिक 2-एथिलहेक्स-2-ईन-1-थाईऑल संरचना रखता है :

(A) $C_2H_5CH = CHCH_2CH_2SH$
(B) $CH_3\underset{\underset{CH_3}{|}}{C}HCH_2CH=\underset{\underset{CH_3}{|}}{C}CH_2SH$
(C*) $CH_3CH_2CH_2CH=\underset{\underset{CH_2CH_3}{|}}{C}CH_2SH$
(D) $CH_3\underset{\underset{SH}{|}}{C}HCH = CHCH_2NH_2$

3. The correct IUPAC name for the compound $(CH_3)_3\ CSO_3H$ is :

(A) Trimethylmethane-1-sulphonic acid
(B) 1,1-Dimethylethane-1-sulphonic acid
(C) Butanesulphonic acid
(D*) 2-Methylpropane-2-sulphonic acid

$(CH_3)_3\ CSO_3H$ यौगिक का सही IUPAC नाम है :

(A) ट्राईमेथिलमेथेन-1-सल्फोनिक अम्ल
(B) 1,1-डाईमेथिलएथेन-1-सल्फोनिक अम्ल
(C) ब्यूटेनसल्फोनिक अम्ल
(D*) 2-मेथिलप्रोपेन-2-सल्फोनिक अम्ल

4. IUPAC name of $CH_3-CH_2-\underset{\underset{OH}{|}}{CH}-\overset{\overset{SH}{|}}{CH}-\underset{\underset{NH_2}{|}}{CH}-CH_3$ is :

(A) 4-Hydroxy-3-mercaptohexan-2-amine
(B*) 5-Amino-4-mercaptohexan-3-ol
(C) 3-Mercapto-2-aminohexan-4-ol
(D) 2-Amino-4-hydroxyhexane-3-thiol

$CH_3-CH_2-\underset{\underset{OH}{|}}{CH}-\overset{\overset{SH}{|}}{CH}-\underset{\underset{NH_2}{|}}{CH}-CH_3$ का IUPAC नाम है :

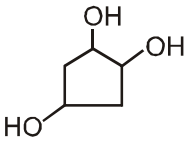
(A) 4-हाइड्रॉक्सी-3-मरकैप्टोहेक्सेन-2-एमीन
(B*) 5-एमीनो-4-मरकैप्टोहेक्सेन-3-ऑल
(C) 3-मरकैप्टो-2-एमीनोहेक्सेन-4-ऑल
(D) 2-एमीनो-4-हाइड्रॉक्सीहेक्सेन-3-थाईऑल

5. The correct IUPAC name of the the compound $CH_3-CH_2-CH(CH_2-CH_3)-N(CH_3)-CH_2-CH_2-CH_3$ is :

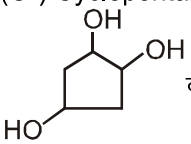
(A) 1-Ethyl-N-methyl-N-propylpropan-1-amine (B) 3-[N-Methyl-N-propylamino]pentane
(C) N-Methyl-N-propylhexan-3-amine (D*) N-Methyl-N-propylpentan-3-amine

$CH_3-CH_2-CH(CH_2-CH_3)-N(CH_3)-CH_2-CH_2-CH_3$ यौगिक का IUPAC नाम है:

(A) 1-एथिल-N-मेथिल-N-प्रोपिलप्रोपेन-1-एमीन (B) 3-[N-मेथिल-N-प्रोपिलएमीनो]पेन्टेन
(C) N-मेथिल-N-प्रोपिलहेक्सेन-3-एमीन (D*) N-मेथिल-N-प्रोपिलपेन्टेन-3-एमीन

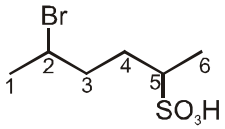
6. IUPAC name of  is :

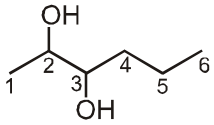
(A) 1,2,4-Trihydroxycyclopentane (B) Cyclopentane-1,3,4-triol
(C*) Cyclopentane-1,2,4-triol (D) 1,3,4-Trihydroxycyclopentane

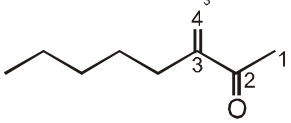
 का IUPAC नाम है:

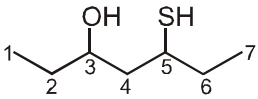
(A) 1,2,4-ट्राईहाइड्रॉक्सीसाइक्लोपेन्टेन (B) साइक्लोपेन्टेन-1,3,4-ट्राइऑल
(C*) साइक्लोपेन्टेन-1,2,4-ट्राइऑल (D) 1,3,4-ट्राईहाइड्रॉक्सीसाइक्लोपेन्टेन

7. Which of the following has incorrect IUPAC numbering. निम्न में से किसका गलत IUPAC क्रमांकन है।

(A*) 

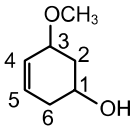
(B) 

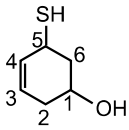
(C) 

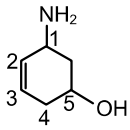
(D) 

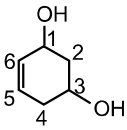
8. Which is not secondary alcohol
(A) Isopropanol (B) Secondary butanol
(C) 3-methylpentane-2-ol (D*) Pentan-1-ol
निम्न में से कौनसा द्वितीयक एल्कोहॉल नहीं है –
(A) आइसोप्रोपेनोल (B) द्वितीयक ब्यूटेनॉल
(C) 3-मेथिलपेन्टेन-2-ऑल (D*) पेन्टेन-1-ऑल

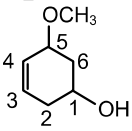
9. Which of the following has correct numbering.
निम्न में से कौनसे यौगिक मे सही अंकन है –

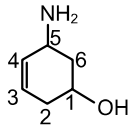
(A) 

(B*) 

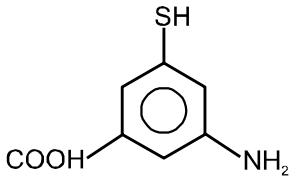
(C) 

(D) 

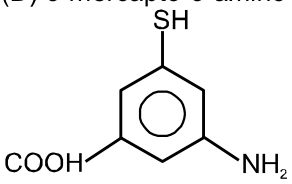
Sol. (A) Correct numbering of A is 

(C) Correct numbering of C is 

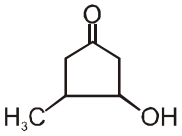
10. The IUPAC name of the compound $CH_3CONHBr$ is :
(A) 1-Bromoacetamide (B*) N-Bromoethanamide
(C) Ethanoyl bromide (D) None of these
$CH_3CONHBr$ का सही IUPAC नाम है।
(A) 1-ब्रोमोऐसिटामाइड (B*) N-ब्रोमोऐथेनामाइड (C) ऐथेनॉइल ब्रोमाइड (D) इनमें से कोई नही

11. What is the IUPAC name of :


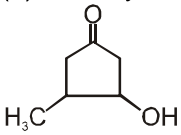
(A) 3-mercapto-5-amino benzene carboxylic acid.
(B*) 3-amino-5-mercapto benzene carboxylic acid.
(C) 5-amino-3-mercapto benzene carboxylic acid.
(D) 5-mercapto-3-amino benzene carboxylic acid.



का IUPAC नाम क्या है।
(A) 3-मरकेप्टो-5-एमीनो बेन्जीन कार्बोसिलिक अम्ल (B*) 3-एमीनो-5-मरकेप्टो बेन्जीन कार्बोसिलिक अम्ल
(C) 5- एमीनो-3-मरकेप्टो बेन्जीन कार्बोसिलिक अम्ल (D) 5-मरकेप्टो-3-एमीनो बेन्जीन कार्बोसिलिक अम्ल

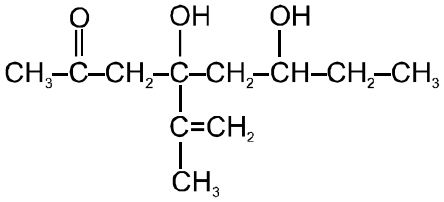
12. The correct IUPAC name for the compound 

is :
(1) 4-Hydroxy-3-methylcyclopentan-1-one (2*) 3-Hydroxy-4-methylcyclopentan-1- one
(3) 5-Methyl -3-oxocyclopentan-1-ol (4) 2-Methyl -4-oxocyclopentan-1-ol



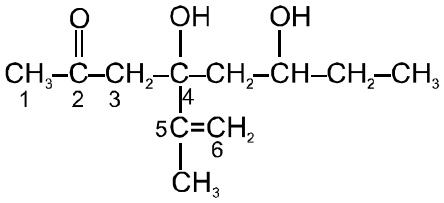
यौगिक का सही IUPAC नाम है :
(1) 4-हाइड्रॉक्सी-3-मेथिलसाइक्लोपेन्टेन-1-ऑन (2*) 3-हाइड्रॉक्सी-4-मेथिलसाइक्लोपेन्टेन-1-ऑन
(3) 5-मेथिल-3-ऑक्सोसाइक्लोपेन्टेन-1-ऑल (4) 2-मेथिल-4-ऑक्सोसाइक्लोपेन्टेन-1-ऑल

13. How many carbon atoms are present in parent chain (main chain) of the following compound ?
निम्न यौगिक की जनक श्रृंखला (मुख्य श्रृंखला) में कितने कार्बन परमाणु उपस्थित है ?

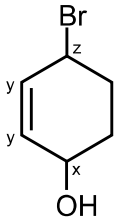


Ans. 06

Sol.

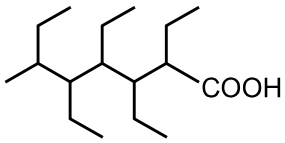


14. In the given compound IUPAC numbering of –Br is :
निम्नलिखित यौगिक में, –Br का सही IUPAC अंकन है?



Ans. 4

15. In the given compound how many carbon atoms present in the parent chain.
निम्नलिखित यौगिक की पैतृक श्रृंखला में कितने कार्बन परमाणु उपस्थित है?



Ans. 7

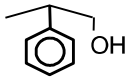
ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **IUPAC Nomenclature of Aromatic compound in which Benzene is side chain.**

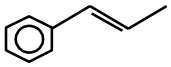
If benzene is used as side chain then **phenyl** is used as prefix. There are following rule in which benzene is used as side chain.

Rule -1 : If main chain have any functional group or unsaturation (double or triple bond) then benzene is used as side chain irrespective of number of carbon in main chain .

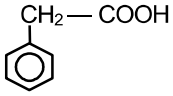
i.e,.



2 – Phenyl propanol – 1

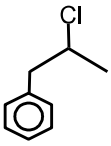


1 – Phenyl prop–1-ene

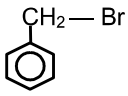


Phenyl ethanoic acid

Rule – 2 : If main chain have substitute like halogen , nitro , etc. then benzene is used as side chain.
i.e,

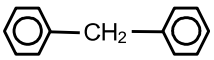


2-chloro-1-phenylpropane

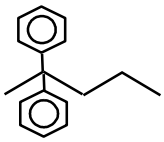


Bromophenylmethane

Rule – 3 : If more than one benzene ring attached to same carbon atom then it is consider as side chain.
i.e.,



Diphenyl methane



2 , 2-Diphenylpentane

ChemINFO — IUPAC NOMENCLATURE

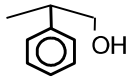
Daily Self-Study Dosage for mastering Chemistry

ऐरोमेटिक यौगिक जिनमे बेंजीन पार्श्व श्रृंखला के रूप में प्रयुक्त होती है का IUPAC नामकरण।

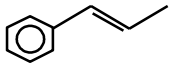
यदि बेंजिन, पार्श्व श्रृंखला में प्रयुक्त होता है तो फेनिल को पूर्वलग्न में प्रयुक्त करते हैं। निम्न नियम द्वारा बेन्जिन को पार्श्व श्रृंखला में प्रयुक्त करते हैं।

नियम-1 : यदि मुख्य श्रृंखला में कोई भी क्रियात्मक समूह या असंतृप्ता (द्विबन्ध या त्रिबन्ध) हो तो बेंजीन को पार्श्व श्रृंखला के रूप में प्रयुक्त करते हैं चाहे मुख्य श्रृंखला में कितने भी कार्बन की संख्या हो।

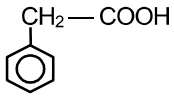
उदा.,



2–फेनिल प्रोपेनोल–1



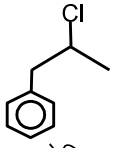
1–फेनिल प्रोप–1-इन



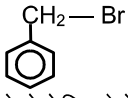
फेनिल एथेनोइक अम्ल

नियम-2 : यदि मुख्य श्रृंखला में प्रतिस्थापी समूह जैसे हेलोजन, नाइट्रो आदि है तो बेंजीन को पार्श्व श्रृंखला में प्रयुक्त करते हैं।

उदा.,



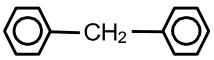
2–क्लोरो–1-फेनिलप्रोपेन



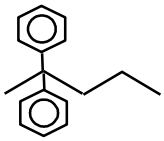
ब्रोमोफेनिलमेथेन

नियम-3 : यदि एक ही कार्बन से एक से अधिक बेंजीन वलय जुड़ी हुई हो तो बेंजीन को पार्श्व श्रृंखला माना जाता है।

उदा.,



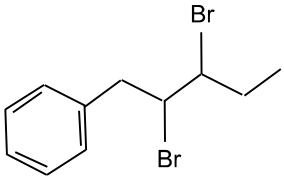
डाइफेनिल मेथेन



2 , 2- डाईफेनिलपेन्टेन

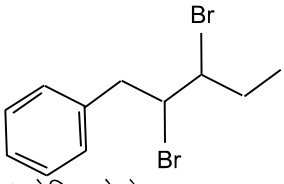
Memorize this theory as soon as you get the DPP. Revize it regularly and master this concept by practice.

(i). Correct IUPAC name of the following compound is



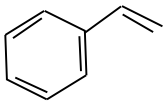
(A*) 2,3-Dibromo-1-phenyl pentane
(B) 3,4-Dibromo-5-phenyl pentane
(C) 2,3-Dibromophenyl benzene
(D) 3,4-Dibromophenyl benzene

निम्न यौगिक का सही IUPAC नाम है :



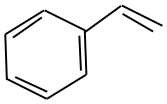
(A*) 2,3-डाइब्रोमो-1-फेनिल पेन्टेन
(B) 3,4-डाइब्रोमो-5-फेनिल पेन्टेन
(C) 2,3-डाइब्रोमो फेनिल बेंजीन
(D) 3,4-डाइब्रोमोफेनिल बेंजीन

(ii). Correct IUPAC name of the following compound is



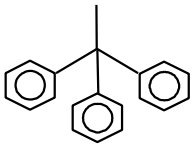
(A) Ethenyl benzene (B) Ethylbenzene (C*) Phenylethene (D) Ethene benzene

निम्न यौगिक का सही IUPAC नाम है :



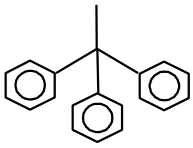
(A) एथिनिल बेंजीन (B) एथिलबेंजीन (C*) फेनिलएथीन (D) एथेनबेंजीन

(iii). Correct IUPAC name of the following compound is :



(A) Ethyl tribenzene
(B*) 1,1,1-Triphenyl ethane
(C) 1-Ethyl-1,1-diphenyl benzene
(D) None of these

निम्न यौगिक का सही IUPAC नाम है :



(A) एथिलट्राइबेंजीन
(B*) 1,1,1-ट्राइफेनिल एथेन
(C) 1-एथिल-1,1-डाईफेनिलबेंजीन
(D) इनमें से कोई नहीं

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Course : VIKAAS(JA)

O/I-CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

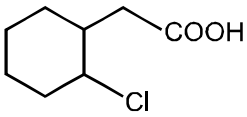
NO. A6

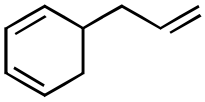
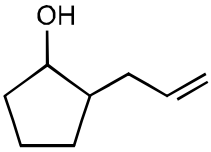
DPP No. # A6 (JEE-ADVANCED)

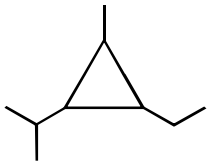
Total Marks : 42 **Max. Time: 26 min.**
Multiple choice objective ('–1' negative marking) Q.1 to Q.7 **(4 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.8 to Q.9 **(3 marks, 3 min.)**
Match the Following (no negative marking) Q.10 **(8 marks, 6 min.)**

1. Which of the following is/are incorrect IUPAC name
(1*) 2-Bromo cyclohex-5-ene carbaldehyde (2*) Ethyl-2-vinyl pentanoate
(3) 5-Bromo-3-chlorohept-3-ene (4*) 2-Ethenylhexa-1,5-diene
निम्न में से कौनसा IUPAC नाम सही है।
(1*) 2-ब्रोमोसाइक्लोहेक्स-5-ईन कार्बोल्डिहाइड (2*) ऐथिल-2-विनाईल पेन्टेनोएट
(3) 5-ब्रोमो-3-क्लोरोहेप्ट-3-ईन (4*) 2-ऐथिनिलहेक्सा-1,5-डाइईन

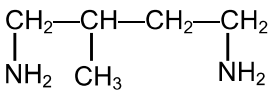
2. In which of the following cyclic ring is parent chain ?
निम्न में से किस कार्बनिक यौगिक में चक्रिय वलय मूल/पैतृक श्रृंखला है ?

(A) 

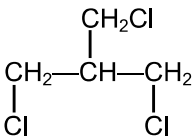
(B*) 
(C*) 

(D*) 

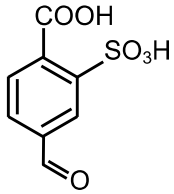
3. Which of the following IUPAC names are correct :

(A) 

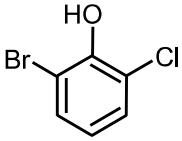
3-(Aminomethyl)butanamine

(B*) 

1,3-Dichloro-2(chloromethyl)propane

(C*) 

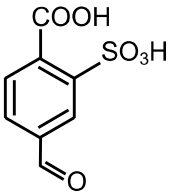
4-formyl-2-sulphobenzoic acid

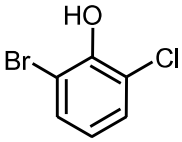
(D*)  2-bromo-6-chlorophenol

निम्न में से कौनसा/कौनसे IUPAC नाम सही है/हैं ?

(A) $CH_2(NH_2)—CH(CH_3)—CH_2—CH_2(NH_2)$ 3-(एमीनोमेथिल) ब्यूटेनेमाइन

(B*) $CH_2(Cl)—CH(CH_2Cl)—CH_2(Cl)$ 1,3-डाईक्लोरो -2(क्लोरोमेथिल) प्रोपेन

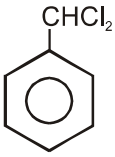
(C*)  4-फॉर्मिल-2-सल्फोबेन्जॉइक अम्ल

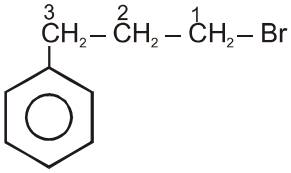
(D*)  2-ब्रोमो-6-क्लोरोफिनोल

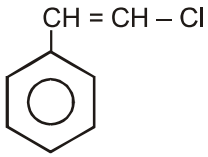
Sol. Correct name of (A) is 2-methylbutane-1,4-diamine.

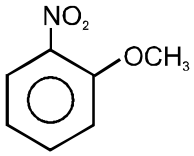
(A) का सही नाम 2-मेथिलब्यूटेन-1,4-डाईएमीन है।

4. Which of the following has correct IUPAC name ?

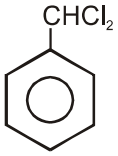
(A*)  Dicholoro phenylmethane (Benzal chloride)

(B*)  1-Bromo-3-phenylpropane

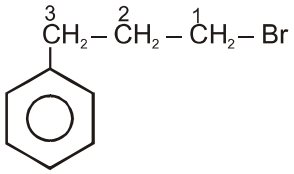
(C*)  1-chloro-2-phenyl ethene

(D*)  1-methoxy-2-nitrobenzene

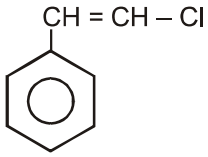
निम्न में से किसका सही IUPAC नाम है?

(A*) 

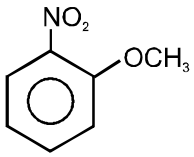
डाइक्लोरो फेनिलमेथेन (बैन्जल क्लोराइड)

(B*) 

1-ब्रोमो-3-फेनिल प्रोपेन

(C*) 

1-क्लोरो-2-फेनिल एथीन

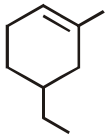
(D*) 

1- मेथॉक्सी-2-नाइट्रोबेन्जीन

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

(A*) $CH_3 - \underset{\underset{O}{\|}}{C} - \underset{\underset{CH_3}{|}}{CH} - CH_3$ 2-Methylbutan -3-one

(B) $CH_3 - \underset{\underset{OH}{|}}{CH} - COOH$ 2-Hydroxypropanoic acid

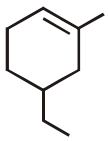
(C)  5-Ethyl-1-methylcyclohex-1-ene

(D*) $CH_3 - \underset{\underset{CH_3}{|}}{CH} - \underset{\underset{O}{\|}}{C} - \underset{\underset{CH_3}{|}}{CH} - OH$ 4-Methyl-3-oxopentan-2-ol

निम्न सरचनाओं में किसका गलत IUPAC नाम है/हैं

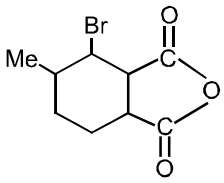
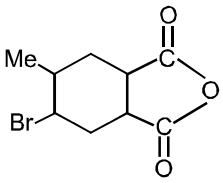
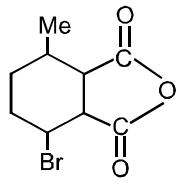
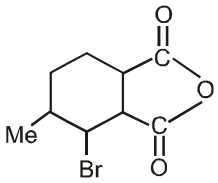
(A*) $CH_3 - \underset{\underset{O}{\|}}{C} - \underset{\underset{CH_3}{|}}{CH} - CH_3$ 2-मेथिलब्यूटेन-3-ऑन

(B) $CH_3 - \underset{\underset{OH}{|}}{CH} - COOH$ 2-हाइड्रॉक्सीप्रोपेनोइक अम्ल

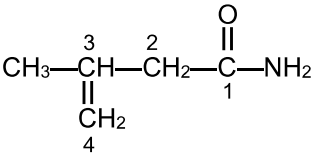
(C)  5-एथिल-1-मेथिलसाइक्लोहेक्स-1-ईन

(D*) $CH_3 - \underset{\underset{CH_3}{|}}{CH} - \underset{\underset{O}{\|}}{C} - \underset{\underset{CH_3}{|}}{CH} - OH$ 4-मेथिल-3-ऑक्सोपेन्टेन-2-ऑल

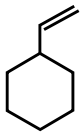
6. Correct structure of 3-Bromo-4-methylcyclohexane-1, 2-dicarboxylic anhydride
3-ब्रोमो-4-मेथिलसाइक्लोहेक्सेन-1, 2-डाईकार्बोक्सिलिक एनहाइड्राइड की सही संरचना होगी

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

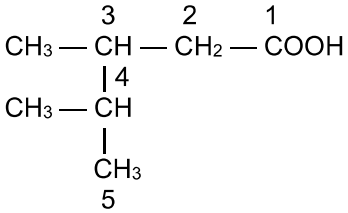
7. Which of the following is/are incorrect IUPAC name ?
(A*) 3-Methylenebutanamide (B*) Ethenylcyclohexane
(C*) 1,2,5-tribromo-3,4,6-trichlorocyclohexane (D) Tricyclopropyl methane
निम्न में से कौनसा/कौनसे IUPAC नाम सही नहीं है ?
(A*) 3-मेथिलीनब्यूटेनेमाइड (B*) एथिनीलसाइक्लोहेक्सेन
(C*) 1,2,5-ट्राईब्रोमो-3,4,6-ट्राईक्लोरोसाइक्लोहेक्सेन (D) ट्राईसाइक्लोप्रोपिलमेथेन

Sol. (A) 

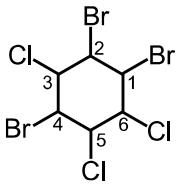
3-Methyl but-3-enamide
3-मेथिलब्यूट-3-इनेमाइड

(B) 

Cyclohexyl ethene
साइक्लोहेक्सिल एथीन

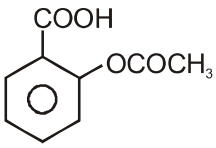
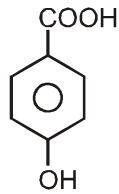
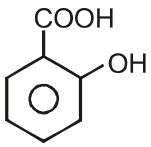
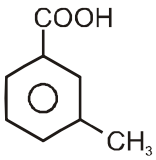
(C) 

3, 4– Dimethyl pentanoic acid
3,4-डाइमेथिलपेन्टेनॉइक अम्ल

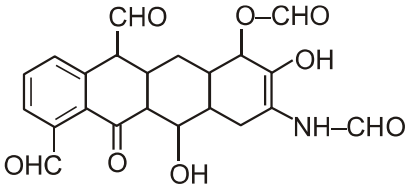
(E) 

1,2,4-Tribromo-3,5,6-trichlorocyclohexane
1,2,4-ट्राईब्रोमो-3,5,6-ट्राईक्लोरोसाइक्लोहेक्सेन

8. In how many of the following compound secondary suffix name is used as carboxylic acid ?
निम्न कितने यौगिक में द्वितियक अनुलग्न के रूप में कार्बोक्सिलिक अम्ल नाम प्रयुक्त हुआ हैं ?

(A) CH_3–COOH (B) 
(C) 
(D) 
(E) 

Ans. 4

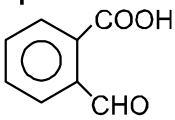
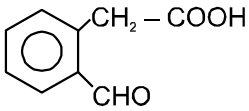
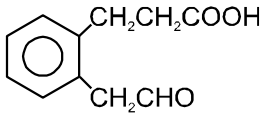
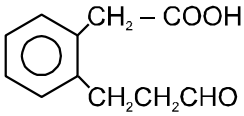
9. 

How many aldehyde (–CHO) groups present in the given compound?

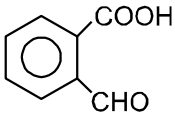
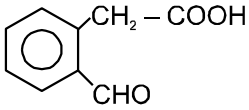
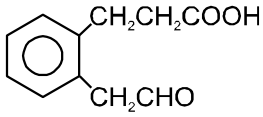
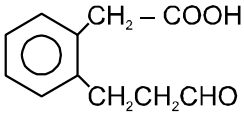
दिये गये उपरोक्त यौगिक में कितने एल्डिहाइड (–CHO) समूह उपस्थित होते हैं?

Ans. **2**

10. Match the following compound with their IUPAC name:

Column-I **Compound**	**Column-II** **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

निम्न यौगिकों के IUPAC नाम का मिलान करें।

कॉलम-I **यौगिक**	**कॉलम -II** **IUPAC नाम**
(P) 	(W) 3-[2-(2-ऑक्सोऐथिल)फेनिल]प्रोपेनोईक अम्ल
(Q) 	(X) 2-[2-(3-ऑक्सोप्रोपिल)फेनिल]ऐथेनोईक अम्ल
(R) 	(Y) 2-(2-फॉर्मिलफेनिल)ऐथेनोईक अम्ल
(S) 	(Z) 2-फॉर्मिलबेन्जीन कार्बोक्सिलिक अम्ल

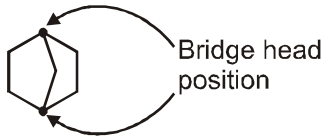
Ans. $(P \rightarrow Z)$; $(Q \rightarrow Y)$; $(R \rightarrow W)$; $(S \rightarrow X)$

ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **IUPAC Name of Bicyclo Bridgehead Compounds**

Bicyclo Compounds

Compounds with two fused cycloalkane rings are called bicyclo compounds. The carbon atoms common to both rings are called bridge head atoms. A bond or chain of carbon atoms connecting the bridge heads is called a bridge.

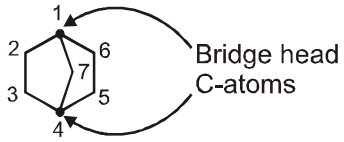


A bicyclic compound is named by attaching the prefix bicyclo to the name of hydrocarbon corresponding to the total number of carbon atoms in two rings.

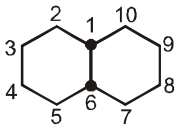
Numbering starts from bridge head to larger ring and then back to smaller ring.

The bracketed number show the number of carbon atoms (except bridge head position carbon atoms) in each bridge and they cited in **decreasing order.**

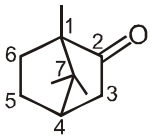
Ex.



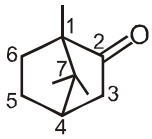
Bicyclo[2.2.1]heptane



Bicyclo[4.4.0]decane



1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one

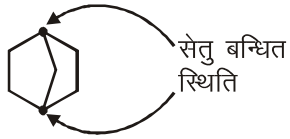


1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one

ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **द्विचक्रिय सेतुशीर्ष यौगिक का IUPAC नाम**

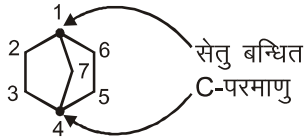
द्विचक्रिय यौगिक : चक्रिय यौगिक ऐसे यौगिक जिनमें दो साइक्लो एल्केन वलय जुड़ी हुई होती है। द्विचक्रिय यौगिक (बाइसाइक्लो यौगिक) कहलाते हैं। वे कार्बन परमाणु जो दोनो वलय में उभयनिष्ठ को सेतु बन्धित परमाणु कहलाते हैं। कार्बन परमाणुओं के बन्ध या श्रृंखला सेतु
बन्धित से जुड़े होते हैं इसे सेतु कहा जाता है।



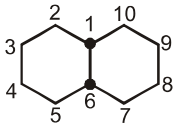
एक बाइसाइक्लो यौगिक का नामकरण दो वलय में उपस्थित कुल कार्बन परमाणुओं से सम्बन्धित हाइड्रोकार्बन के नाम से पूर्व बाइसाइक्लो लगाकर किया जाता है।

सेतु बन्धित में नामकरण पहले बड़ी वलय में करते हैं और उसके बाद छोटी वलय में कोष्ठक प्रत्येक सेतु में कार्बन परमाणुओं की संख्या (सेतुबंधित कार्बन परमाणु के अलावा) को **घटते क्रम में** दर्शाता है।

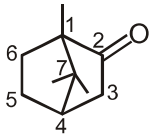
उदाहरण :



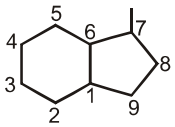
बाइसाइक्लो[2.2.1]हेप्टेन



बाइसाइक्लो[4.4.0]डेकेन



1,7,7-ट्राइमेथिलबाइसाइक्लो[2.2.1]हेप्टेन-2-ऑन



7-मेथिलबाइसाइक्लो[4.3.0]नॉनेन

Memorize this theory as soon as you get the DPP. Revize it regularly and master this concept by practice.

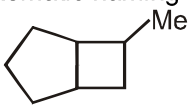
(i). The IUPAC name of the compound is

(A*) Bicyclo [2.1.0] pentane
(B) 1,2-cyclopropylcyclobutane
(C) Bicyclo [0.1.2] pentane
(D) 1-Methylenecyclobutane

यौगिक का IUPAC नाम है :

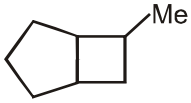
(A*) बाइसाइक्लो [2.1.0] पेन्टेन
(B) 1,2-साइक्लोप्रोपिलसाइक्लोब्यूटेन
(C) बाइसाइक्लो [0.1.2] पेन्टेन
(D) 1-मेथिलिनसाइक्लोब्यूटेन

(ii). The systematic naming of the following cycloalkane is

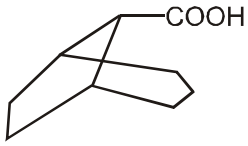


(A*) 6-Methylbicyclo [3.2.0] heptane
(B) 7-Methylbicyclo [3.2.0] heptane
(C) 2-Methylbicyclo [3.2.0] heptane
(D) 3-Methylbicyclo [3.2.0] heptane

निम्नलिखित साइक्लोएल्केन का व्यवस्थित नाम है :

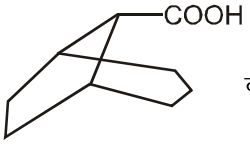


(A*) 6-मेथिलबाइसाइक्लो [3.2.0] हेप्टेन
(B) 7-मेथिलबाइसाइक्लो [3.2.0] हेप्टेन
(C) 2-मेथिलबाइसाइक्लो [3.2.0] हेप्टेन
(D) 3-मेथिलबाइसाइक्लो [3.2.0] हेप्टेन

(iii). IUPAC name of 

is

(A) Bicyclo [3.2.1] octan-2-oic acid
(B) Bicyclo [3.2.1] octan-1-carboxylic acid
(C*) Bicyclo [3.2.1] octan-8-carboxylic acid
(D) None of these



का सही IUPAC नाम क्या होगा :

(A) बाइसाइक्लो [3.2.1] ऑक्टेन-2-ऑइक अम्ल
(B) बाइसाइक्लो [3.2.1] ऑक्टेन-1-कार्बोक्सिलिक अम्ल
(C*) बाइसाइक्लो [3.2.1] ऑक्टेन-8-कार्बोक्सिलिक अम्ल
(D) इनमें से कोई नहीं।

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TARGET : JEE (Main + Advanced) 2021

Course : VIKAAS(JA)

O/I-CHEMISTRY
DPP
DAILY PRACTICE PROBLEMS
NO. A7

DPP No. # A7 (JEE-MAIN)

Total Marks: 45 **Max. Time: 33 min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.12 **(3 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.13 to Q.15 **(3 marks, 3 min.)**

1. The structures $(CH_3)_2CHCH_2Br$ and $CH_3(CH_2)_3Br$ shows :
(A) position isomers (B*) chain isomerism
(C) functional isomerism (D) None of these
संरचना $(CH_3)_2CHCH_2Br$ तथा $CH_3(CH_2)_3Br$ निम्न में से कौनसी समावयवता दर्शाते है :
(A) स्थिति समावयवता (B*) श्रृंखला समावयवता
(C) क्रियात्मक समावयवता (D) इनमें से कोई नहीं

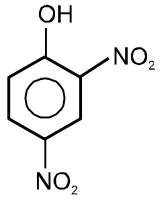
2. n-Propyl alcohol and isopropyl alcohol are examples of :
(A*) Position isomers (B) Chain isomerism (C) Tautomerism (D) Geometrical isomerism
n-प्रोपिल एल्कोहॉल तथा आइसोप्रोपिल एल्कोहॉल निम्न में से कौनसी समावयवता का उदाहरण दर्शाते है :
(A*) स्थिति समावयवता (B) श्रृंखला समावयवता (C) चलावयवता (D) ज्यामितीय समावयवता

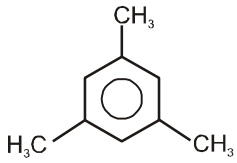
3. The compound which is not isomeric with diethyl ether is :
(A) n-Propylmethyl ether (B) Butan-1-ol
(C) 2-Methylpropan-2-ol (D*) Butanone
निम्न में से कौनसा यौगिक डाइएथिल ईथर का समावयवी नहीं है :
(A) n-प्रोपिलमेथिल ईथर (B) ब्यूटेन-1-ऑल (C) 2-मेथिलप्रोपेन-2-ऑल (D*) ब्यूटेनोन

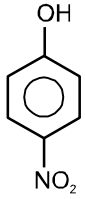
4. The compound $C_4H_{10}O$ can show
(A) Metamerism (B) Functional isomerism (C) Positional isomerism (D*) All types
निम्नलिखित कार्बनिक यौगिक $C_4H_{10}O$ कौनसी समावयवता दर्शाता है :
(A) मध्यावयवता (B) क्रियात्मक समायवता (C) स्थिति समावयवता (D*) उपरोक्त सभी

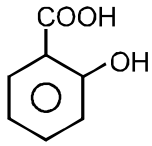
5. What is the common name of Ethanoic acid?
(A) Formic acid (B*) Acetic acid (C) Acetaldehyde (D) Propionic acid
ऐथेनॉइक अम्ल का सामान्य नाम क्या है ?
(A) फॉर्मिक अम्ल (B*) एसिटिक अम्ल (C) एसिटेल्डिहाइड (D) प्रोपेनॉइक अम्ल

6. Which of the following is salicylic acid? निम्न में से कौनसा सेलिसिलिक अम्ल है?

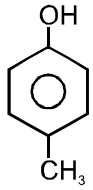
(A) 

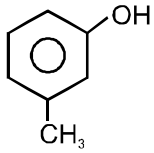
(B) 

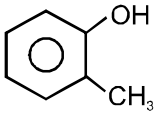
(C) 

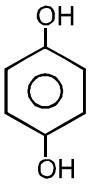
(D*) 

7. Which of the following is not cresol. निम्न में से कौनसा क्रिसॉल नही है?

(A) 

(B) 

(C) 

(D*) 

8. What is the common name of Ethyl ethanoate?

(A) Methyl formate (B) Acetaldehyde (C) Ethyl formate (D*) Ethyl acetate

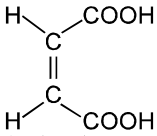
एथिल ऐथेनोइट का सामान्य नाम क्या है ?

(A) मेथिल फॉर्मेट (B) एसिटेल्डिहाइड (C) एथिल फॉर्मेट (D*) एथिल एसिटेट

9. Which of the following is incorrectly matched?

(A) $CH_2(OH)-CH_2(OH)$ Glycol

(B) $COOH-COOH$ Oxalic acid

(C*) 

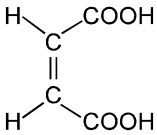
Fumaric acid

(D) $HOOC–CH_2–CH_2–COOH$ Succinic acid

निम्न में से कौनसा सही सुमेलित नहीं है ?

(A) $CH_2(OH)-CH_2(OH)$ ग्लाइकॉल

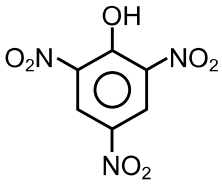
(B) $COOH-COOH$ ऑक्सैलिक अम्ल

(C*) 

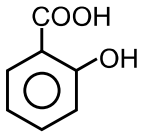
फ्यूमेरिक अम्ल

(D) $HOOC–CH_2–CH_2–COOH$ सक्सिनिक अम्ल

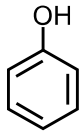
10. Select the incorrect name of the following compound.

(A) 

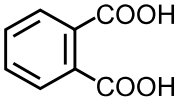
Picric acid

(B) 

Salicyclic acid

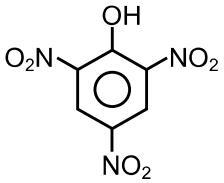
(C) 

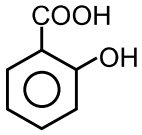
Phenol

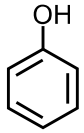
(D*) 

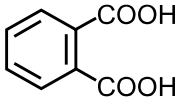
Isophthalic acid

निम्न यौगिको के गलत नाम का चयन कीजिए।

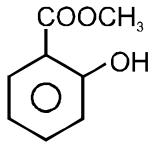
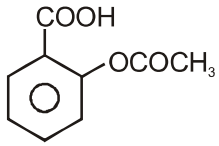
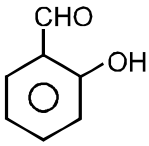
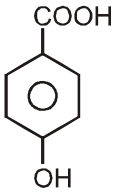
(A)  पिक्रिक अम्ल

(B)  सेलिसिलिक अम्ल

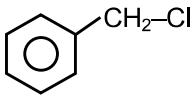
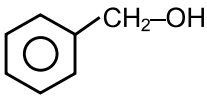
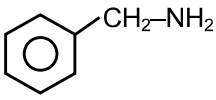
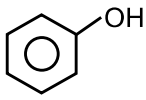
(C)  फीनॉल

(D*)  आइसोथैलिक अम्ल

11. Which is Aspirin? निम्न में एस्प्रीन है?

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

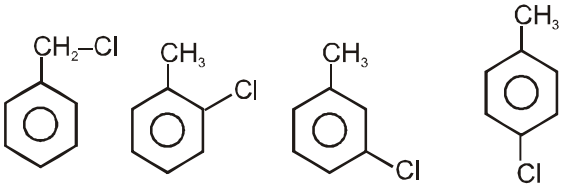
12. Which of the following is not benzyl derivative :
निम्न में से कौनसा यौगिक बेन्जिल व्युत्पन्न हैं :

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

Sol. In benzyl derivative, any functional group is attached to an sp^3 hybridized C-atom next to benzene ring.
बेन्जिल व्युत्पन्न में क्रियात्मक समूह बेंजीन वलय से अगले sp^3 संकरित C–परमाणु से जुड़ा होता है।

13. What is the possible number of isomers of the aromatic compounds of molecular formula C_7H_7Cl.
ऐरोमैटिक यौगिक अणुसूत्र C_7H_7Cl के सभी सम्भावित समावयवी लिखिये।

Ans. **04**

Sol. 
(I) (II) (III) (IV)

14. Number of structurally isomeric carbonyl compounds possible with molecular formula $C_5H_{10}O$ .....:
अणुसूत्र $C_5H_{10}O$ के सम्भव संरचनात्मक समावयवी कार्बोनिल यौगिकों की संख्या हैं :

Ans. 07

Sol. (1) $CH_3–CH_2–CH_2–CH_2–CHO$ (2) $CH_3–CH_2–CH(CH_3)–CHO$ (3) $CH_3–CH(CH_3)–CH_2–CHO$

(4) $CH_3-\underset{CH_3}{\overset{CH_3}{C}}-CHO$ (5) $CH_3-\underset{O}{\underset{\|}{C}}-CH_2-CH_2-CH_3$ (6) $CH_3-\underset{O}{\underset{\|}{C}}-\underset{CH_3}{\underset{|}{CH}}-CH_3$

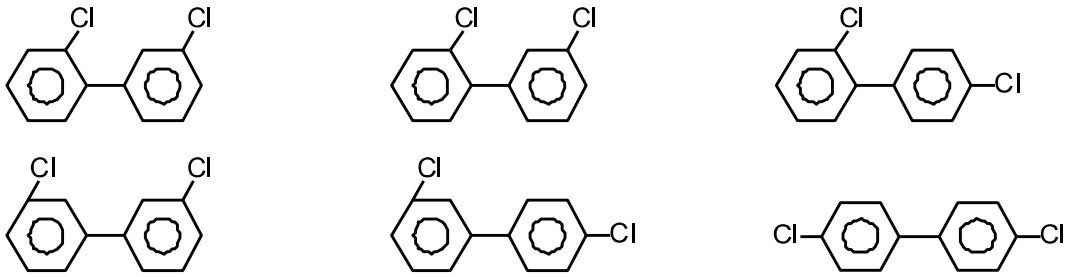
(7) $CH_3-CH_2-\underset{O}{\underset{\|}{C}}-CH_2-CH_3$

15. How many dichlorodiphenyl with molecular formula $C_{12}H_8Cl_2$ of each benzene ring containing only one (–Cl) group are possible

अणुसूत्र $C_{12}H_8Cl_2$ डाईक्लोरो डाईफेनिल यौगिक जिसमें एक (–Cl) समूह एक बेंजीन वलय पर उपस्थित हो, उसके कितने स्थिति समावयवी सम्भव हैं।

Ans. 6

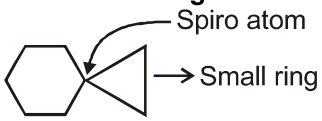
Sol.



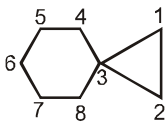
ChemINFO — IUPAC NOMENCLATURE

Daily Self-Study Dosage for mastering Chemistry — **IUPAC Name of Spiro Compounds**

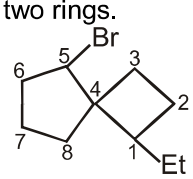
Spiro are polycyclics that share only one carbon atom. In substituted spiro, the **numbering is started next to the spiro atom in lower membered ring.**



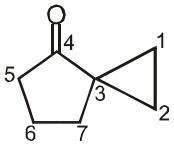
The prefix spiro is followed by brackets containing the number of carbon atoms in **ascending order**, in each ring attached to common carbon atom and ending with the name of hydrocarbon corresponding to the total number of carbon atoms in two rings.



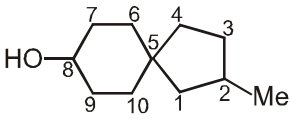
Spiro[2.5]octane



5-Bromo-1-ethylspiro[3.4]octane



Spiro[2.4]heptan-4-one

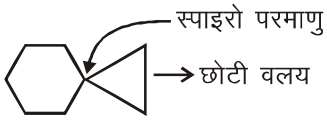


2-Methylspiro[4.5]decan-8-ol

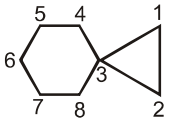
ChemINFO — IUPAC NOMENCLATURE

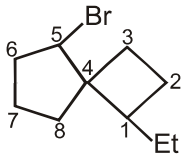
Daily Self-Study Dosage for mastering Chemistry — **स्पाइरो यौगिको के IUPAC नाम**

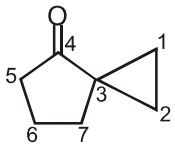
स्पाइरो बहुचक्रिय होते हैं जो कि केवल एक कार्बन परमाणु का साझा करते हैं। **प्रतिस्थापी स्पाइरो में, निम्नतर सदस्यी वयल के क्रमांकन स्पाइरो परमाणु के आगे से शुरू करते हैं।**

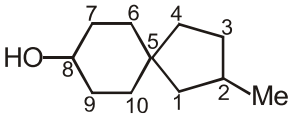


प्रत्येक वलय में समान कार्बन परमाणु से जुड़े पूर्वलग्न स्पाइरो को बढ़ते क्रम में कार्बन परमाणु संख्या युक्त कोष्ठको के पश्चात् लिखा जाता है तथा दो वलय में कुल कार्बन परमाणु संख्या अनुसार हाइड्रोकार्बन के नाम से समाप्त किया जाता है।


स्पाइरो[2.5]ऑक्टेन

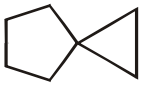
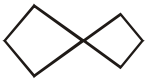

5-ब्रोमो-1-एथिलस्पाइरो[3.4]ऑक्टेन


स्पाइरो[2.4]हेप्टेन-4-ऑन

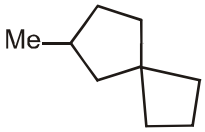

2-मेथिलस्पाइरो[4.5]डेकेन-8-ऑल

Memorize this theory as soon as you get the DPP. Revize it regularly and master this concept by practice.

(i). The structure of spiro[3.3]heptane is : स्पाइरो[3.3]हेप्टेन की संरचना है :

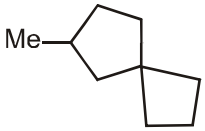
(A)  (B) (C) (D*) 

(ii). The systematic naming of the following compounds is :



(A) 2-Methylspiro[3.4]octane (B) 3-Methylspiro[3.4]octane
(C*) 6-Methylspiro[3.4]octane (D) 7-Methylspiro[3.4]octane

निम्नलिखित यौगिक का व्यवस्थित नाम है :



(A) 2-मेथिलस्पाइरो[3.4]ऑक्टेन (B) 3-मेथिलस्पाइरो[3.4]ऑक्टेन
(C*) 6-मेथिलस्पाइरो[3.4]ऑक्टेन (D) 7-मेथिलस्पाइरो[3.4]ऑक्टेन

(iii). The correct IUPAC name for the compound

(A) Spiro[3.5]non-1-ene (B*) Spiro[3.5]non-5-ene
(C) Spiro[5.3]dec-5-ene (D) Spiro[3.5]non-2-ene

यौगिक का सही IUPAC नाम है :

(A) स्पाइरो[3.5]नॉन-1-ईन (B*) स्पाइरो[3.5]नॉन-5-ईन
(C) स्पाइरो[5.3]डेक-5-ईन (D) स्पाइरो[3.5]नॉन-2-ईन

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Course : VIKAAS(JA)

O/I-CHEMISTRY

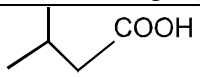
DPP

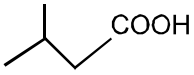
DAILY PRACTICE PROBLEMS

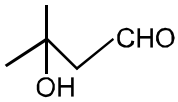
NO. A8

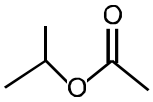
DPP No. # A8 (JEE-ADVANCED)

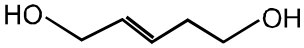
Total Marks : 42 **Max. Time: 26 min.**
Multiple choice objective ('–1' negative marking) Q.1 to Q.7 **(4 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.8 to Q.9 **(3 marks, 3 min.)**
Match the Following (no negative marking) Q.10 **(8 marks, 6 min.)**

1.  have functional isomer relation with

 का किससे क्रियात्मक समूह समावयवी संबंध है।

(A*) 

(B*) 

(C*) 

(D*)

2. Which is the correct relationship mentioned in bracket :

(A*) $CH_3–CN$ and CH_3NC (Functional isomers)

(B*) $CH_3–O–N=O$ and $CH_3-\underset{\underset{O}{\|}}{N}\rightarrow O$ (Functional isomers)

(C*) $CH_3–CH_2–CH_2–CHO$ and $H_3C-\underset{\underset{CHO}{|}}{CH}-CH_3$ (Chain isomer)

(D*) $H-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{CH_3}{|}}{CH}-CH_3$ and $H-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{O}{\|}}{C}-CH_2-CH_2-CH_3$ (Functional isomers)

निम्न में से कौनसा संम्बन्ध कोष्ठक में दिया गया सही हैं।

(A*) $CH_3–CN$ तथा CH_3NC (क्रियात्मक समावयवी)

(B*) $CH_3–O–N=O$ तथा $CH_3-\underset{\underset{O}{\|}}{N}\rightarrow O$ (क्रियात्मक समावयवी)

(C*) $CH_3–CH_2–CH_2–CHO$ तथा $H_3C-\underset{\underset{CHO}{|}}{CH}-CH_3$ (श्रृंखला समावयवी)

(D*) $H-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{CH_3}{|}}{CH}-CH_3$ तथा $H-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{O}{\|}}{C}-CH_2-CH_2-CH_3$ (क्रियात्मक समावयवी)

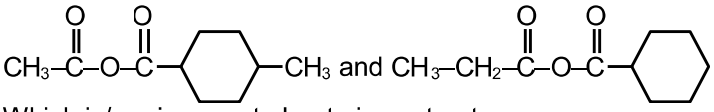
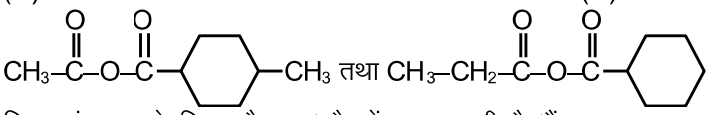
Sol. $H-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{CH_3}{|}}{CH}-CH_3$ and (तथा) $H-\underset{\underset{O}{\|}}{C}-O-\underset{\underset{O}{\|}}{C}-CH_2-CH_2-CH_3$ (Functional isomers)

(क्रियात्मक समावयवी)

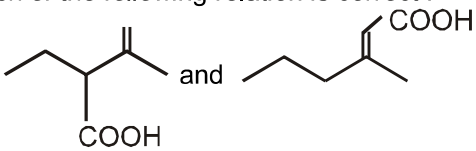
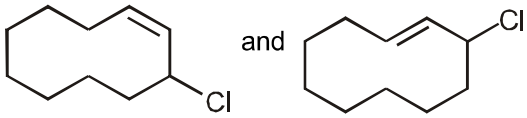
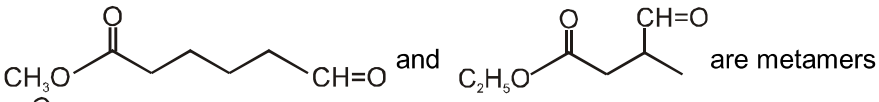
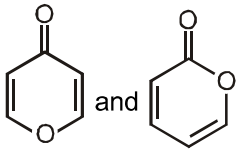
3. Which of the following alkene can give 3-methylpentane on hydrogenation.
(A*) 3-methylpent-1-ene (B*) 3-methylpent-2-ene
(C) 2-methylpent-1-ene (D*) 2-ethylbut-1-ene
निम्न में से कौनसी एल्कीन हाइड्रोजनीकरण पर 3-मेथिलपेन्टेन दे सकती है।
(A*) 3-मेथिलपेन्ट-1-ईन (B*) 3-मेथिलपेन्ट-2-ईन (C) 2-मेथिलपेन्ट-1-ईन (D*) 2-ऐथिलब्यूट-1-ईन

4. $H-\overset{O}{\overset{||}{C}}-OC_2H_5$ and $CH_3-\overset{O}{\overset{||}{C}}-CH_2-OH$
Which is/are true about above two structure – **(RVP Sir) (IUPAC & Structural Isomers)**
(A*) Degree of unsaturation is (1) (B*) Both are functional isomers
(C) Both are metamers (D*) Both have same molecular formula
$H-\overset{O}{\overset{||}{C}}-OC_2H_5$ तथा $CH_3-\overset{O}{\overset{||}{C}}-CH_2-OH$
उपरोक्त दोनों संरचना के सन्दर्भ मे सही कथन है/हैं –
(A*) असंतृप्ता की कोटि (1) है (B*) दोनों क्रियात्मक समावयवी है
(C) दोनों मध्यावयवी है (D*) दोनों के अणुसूत्र समान हैं

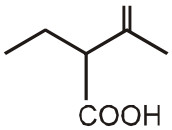
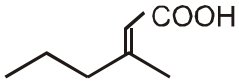
Sol. $H-\overset{O}{\overset{||}{C}}-OC_2H_5$ and $CH_3-\overset{O}{\overset{||}{C}}-CH_2-OH$ not a metamers to each other.
$H-\overset{O}{\overset{||}{C}}-OC_2H_5$ तथा $CH_3-\overset{O}{\overset{||}{C}}-CH_2-OH$ एक दूसरे के मध्यावयवी नही है।

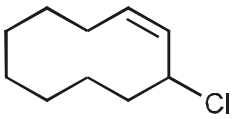
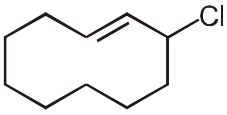
5. 
Which is/are incorrect about given structure **(RVP Sir) (IUPAC & Structural Isomers)**
(A*) Both are functional isomers (B*) The degree of unsaturation is 2
(C) Both have same molecular formula (D) Both are metamers to each other

निम्न संरचना के लिए कौनसा/कौनसें कथन सही है/हैं –
(A*) दोनों क्रियात्मक समावयवी है। (B*) असंतृप्तता की कोटि 2 है।
(C) दोनों के अणुसूत्र समान हैं (D) दोनों मध्यावयवी हैं

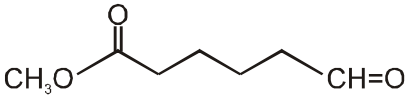
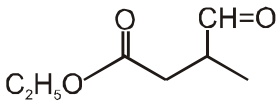
Sol. Both having same functional group so they are not functional isomers the degree of unsaturation is 3.
दोनों में समान क्रियात्मक समूह के कारण क्रियात्मक समावयवी नहीं है तथा असंतृप्तता की दर 3 है।

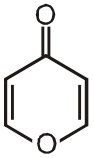
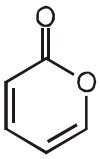
6. Which of the following relation is correct :
(A*)  are chain iosmers
(B)  are positional isomers
(C*)  are metamers
(D*)  are functional group isomers

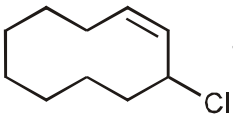
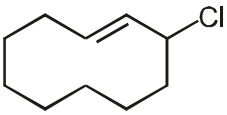
निम्न में से कौनसा संबंध सही है :

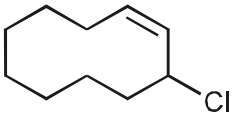
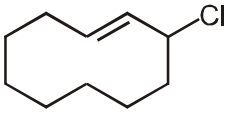
(A*)  तथा  श्रृंखला समावयवी हैं।

(B)  तथा  स्थिति समावयवी हैं।

(C*)  तथा  मध्यावयवी हैं।

(D*)  तथा  क्रियात्मक समूह समावयवी हैं।

Sol.  and  are identical.

 तथा  समरूप हैं।

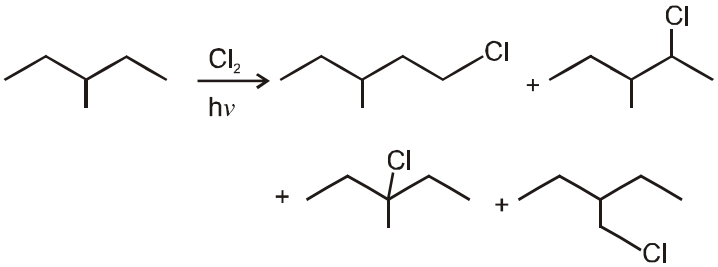
7. Which statement(s) is/are correct.
(A*) Degree of unsaturation tells about H-defficiency from any molecule in the form of multiple bond or ring.
(B*) Hydrogenation tells about carbon skeleton.
(C*) Monohalogenation tells about type of chemically different hydrogen.
(D*) Ozonolysis tells about position of double or trible bond in molecule.
कौनसा कौनसे कथन सही है/हैं।
(A*) असंतृप्तता की कोटि हमें बहुबन्ध या वलय के रूप में किसी अणु में H-न्यूनता के बारे में बताता है।
(B*) हाइड्रोजनीकरण हमे कार्बन ढ़ॉचे (skeleton) की के बारे में बताता है।
(C*) मोनोहैलोजनीकरण हमे रासयनिक रूप से भिन्न H के प्रकार के बारे में बताता है।
(D*) ओजोनीअपघटन हमें अणु में द्वबन्ध या त्रिबन्ध की स्थिति के बारे में बताता है।

Sol. Self explanatory.
हल : स्वतः समझने योग्य।

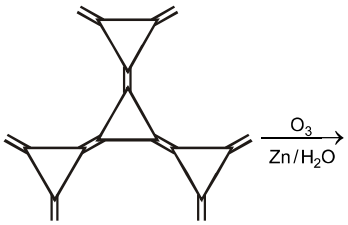
8. How many monochloro structural isomers will produce when 3-Methylpentane, reacts with chlorine in presence of sunlight ?
जब 3-मेथिलपेन्टेन की अभिक्रिया सूर्य के प्रकाश की उपस्थिति में क्लोरीन के साथ की जाती है तो कितने मोनोक्लोरो संरचना समावयवी प्राप्त होते हैं?

Ans. 04

Sol.



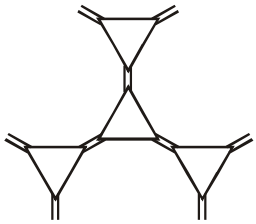
9. Number of different products in the given ozonolysis reaction will be :
दी गयी ओजोनीकरण अभिक्रिया से प्राप्त भिन्न उत्पादों की संख्या होगीः



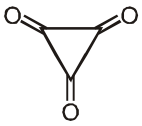
$\xrightarrow[Zn/H_2O]{O_3}$ Products उत्पाद

Ans. **02**

Sol.



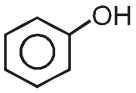
$\xrightarrow[Zn/H_2O]{O_3}$



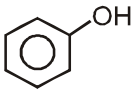
+ $CH_2 = O$

4 moles 6 moles

10. **Match the Column**

Comun–I (Compounds)		**Column–II (Common Names)**	
(A)	$CH_2–OH$ | $CH–OH$ | $CH_2–OH$	(p)	Carbinol
(B)	$CH_2–OH$ | $CH_2–OH$	(q)	Gycerol
(C)		(r)	Ethylene glycol
(D)	$CH_3 – OH$	(s)	Phenol

निम्नलिखत को सुमेलित कीजिए

कॉलम–I (यौगिक)		**कॉलम–II (सामान्य नाम)**	
(A)	$CH_2–OH$ | $CH–OH$ | $CH_2–OH$	(p)	कार्बीनोल
(B)	$CH_2–OH$ | $CH_2–OH$	(q)	ग्लीसीरोल
(C)		(r)	एथीलीनग्लाइकोल
(D)	$CH_3 –OH$	(s)	फिनॉल

Ans. $A \rightarrow q$, $B \rightarrow r$, $C \rightarrow s$, $D \rightarrow p$

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TARGET : JEE (Main + Advanced) 2022

Course : VIKAAS(JA)

O/I-CHEMISTRY

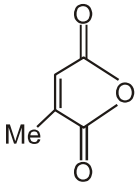
DPP

DAILY PRACTICE PROBLEMS

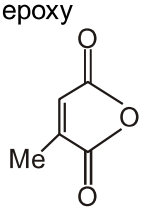
NO. A9

DPP No. # A9 (JEE-MAIN)

Total Marks: 60 **Max. Time: 33 min.**
Single choice Objective ('–1' negative marking) Q.1 to Q.12 **(3 marks, 2 min.)**
Numerical Value Questions ('0' negative marking) Q.13 to Q.15 **(3 marks, 3 min.)**

1. 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

यौगिक का सही IUPAC नाम होगा 

(A*)2-मेथिलब्यूटईनडाईओइक एनहाइड्राइड (B) 3-मेथिलब्यूटईनडाईओइक एनहाइड्राइड
(C) 2-मेथिल-1,4-डाईकीटोब्यूटईन इपॉक्सी (D) 2-मेथिलसाइक्लोपेन्टनोक्सी-1,4-डाईऑन

2. The IUPAC name of the compound $H-\overset{\overset{O}{\|}}{C}-N\begin{matrix}CH_3\\CH_2-CH_3\end{matrix}$ is

(A*) N-Ethyl-N-methylmethanamide (B) N-Methyl-N-ethylmethanamide
(C) N-Ethyl- N-methylformamide (D) N-Ethylmethylmethanamide

यौगिक का IUPAC नाम है $H-\overset{\overset{O}{\|}}{C}-N\begin{matrix}CH_3\\CH_2-CH_3\end{matrix}$

(A*) N-एथिल-N-मेथिलमेथेनामाइड (B) N-मेथिल-N-एथिलमेथेनामाइड
(C) N-एथिल-N-मेथिलफार्मामाइड (D) N-एथिलमेथिलमेथेनामाइड

3. Which of the following amino acids contains sulfur atom
(A) Serine (B*) Cystein (C) Alanine (D) Proline
निम्न में से कौनसा ऐमिनों अम्ल सल्फर परमाणु रखता है।
(A) सेरिन (B*) सिस्टीन (C) ऐलानिन (D) प्रोलीन

4. Which of the following contains two-COOH group
(A*) Aspartic acid (B) Tyrosine (C) Histidine (D) Glycine
निम्न में से किस ऐमिनों अम्ल में दो –COOH समूह उपस्थित है।
(A*) ऐस्पार्टिक अम्ल (B) टायरोसिन (C) हिस्टिडीन (D) ग्लायसिन

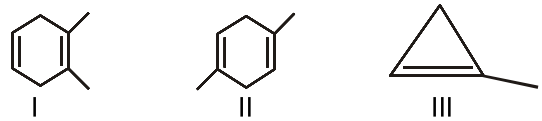
5. Which of the following give positive test with neutral $FeCl_3$

(A) Leucine (B*) Tyrosine (C) Asparagine (D) Serine

निम्न में से कौन उदासीन $FeCl_3$ के साथ धनात्मक परीक्षण देता है।

(A) ल्यूसिन (B*) टायरोसिन (C) ऐस्पार्जिन (D) सेरिन

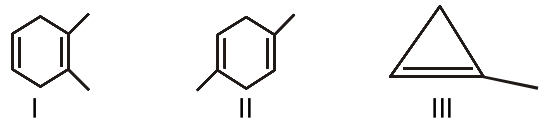
6. Which of the following will give same product on ozonolysis



I II III

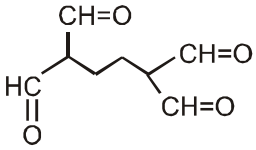
(A) I & II only (B) II & III only (C) I and III only (D*) All

निम्न मे से कौनसा यौगिक ओजोनीअपघटन पर समान उत्पाद देता है।

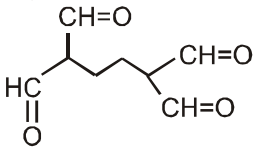


I II III

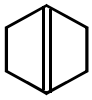
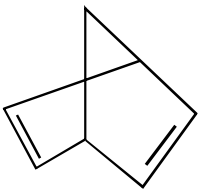
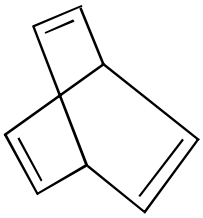
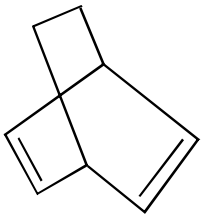
(A) I व II केवल (B) II व III केवल (C) I व III केवल (D*) सभी

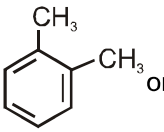
7. 

can be obtained by ozonolysis of -

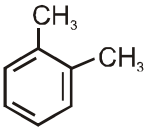


निम्न में से किसके ओजोनीअपघटन द्वारा प्राप्त किया जा सकता है।

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

8. 

on reductive ozonolysis [$O_3/Zn/H_2O/\Delta$] gives :



के अपचायी ओजोनी अपघटन [$O_3/Zn/H_2O/\Delta$] द्वारा प्राप्त उत्पाद होंगे–

(A) $(CHO)_2 + CH_3-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-CH_3$

(B*) $(CHO)_2 + CH_3-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-CH_3 + CH_3-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-H$

(C) $CH_3-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-H + CH_3-\underset{\underset{O}{\|}}{C}-\underset{\underset{O}{\|}}{C}-CH_3$

(D) Benzene is stable hence cannot be ozonolysed

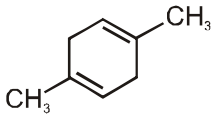
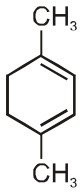
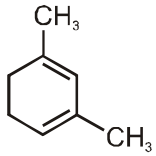
बेन्जीन स्थायी है, इसलिये इसका ओजोनी अपघटन नही हो सकता

9. $X \xrightarrow[\Delta]{H_2/Ni} C_8H_{16} \xrightarrow{Cl_2/h\nu}$ 3 monochloro structural product (3 मोनो क्लोरो संरचनात्मक उत्पाद)

$\xrightarrow[Zn]{O_3/H_2O} CH_3-CH\begin{matrix}CHO\\CHO\end{matrix}$

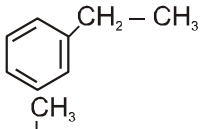
Structure of X will be :

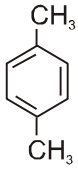
X की संरचना होगी।

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

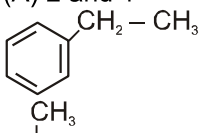
10. Molecular formula C_3H_9N represents :
(A) Only primary amine (B) Only secondary amine
(C) Three primary amine, two secondary amine and one tertiary amine
(D*) Two primary amine, one secondary amine and one tertiary amine
अणुसूत्र C_3H_9N प्रदर्शित करता है :
(A) केवल प्राथमिक एमीन (B) केवल द्वितीयक एमीन
(C) तीन प्राथमिक एमीन, दो द्वितीयक एमीन तथा एक तृतीयक एमीन
(D*) दो प्राथमिक एमीन, एक द्वितीयक एमीन तथा एक तृतीयक एमीन

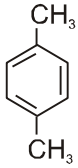
11. How many ketones with molecular formula $C_5H_{10}O$ is possible (structural isomers only).
$C_5H_{10}O$ अणुसूत्र के कितने कीटोन (केवल संरचनात्मक समावयवी) सम्भव है –
(A) 2 (B*) 3 (C) 4 (D) 6

12.  $\xrightarrow{Cl_2/h\nu}$ 'm' monochloro products

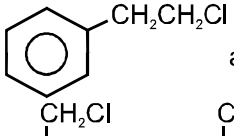
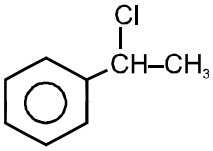
 $\xrightarrow{Cl_2/h\nu}$ 'n' dichloro products

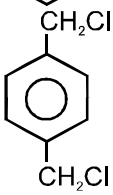
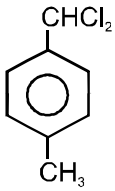
The value of m and n are respectively :
(A) 2 and 1 (B*) 2 & 2 (C) 1 & 2 (D) 1 & 1

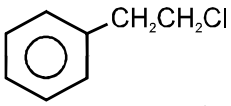
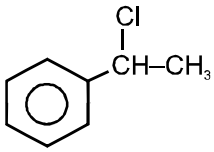
 $\xrightarrow{Cl_2/h\nu}$ 'm' मोनोक्लोरो उत्पाद

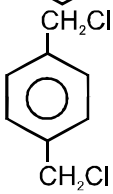
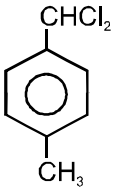
 $\xrightarrow{Cl_2/h\nu}$ 'n' डाइक्लोरो उत्पाद

m और n के मान क्रमशः हैं :
(A) 2 तथा 1 (B*) 2 तथा 2 (C) 1 तथा 2 (D) 1 तथा 1

Sol. 'm' no. of product  and 

'n' no. of product  and 

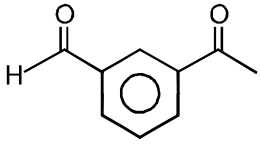
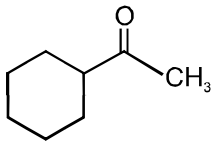
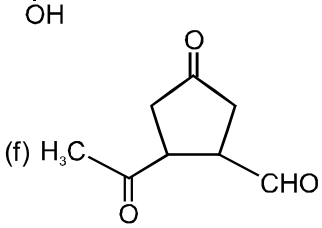
'm' उत्पाद की संख्या  तथा 

'n' उत्पाद की संख्या  तथा 

13. How many compounds will give positive iodoform test but negative Tollen's test ?

निम्न में कितने यौगिक धनात्मक आयोडोफॉर्म परीक्षण तथा ऋणात्मक टॉलेन अभिकर्मक परीक्षण देते है ?

(a) CH_3CHO (b) $CH_3-\underset{\underset{O}{\|}}{C}-CH_3$ (c) $CH_3-\underset{\underset{OH}{|}}{CH}-CH_2-CH_3$

(d)  (e)  (f) 

Ans. 3

Sol. (3) b, c, e

14. Consider all possible isomeric amines of molecular weight = 73. How many of them give isocyanide with $CHCl_3$ and KOH

अणुभार 87 के सभी सम्भव समावयवी एमीन पर विचार कीजिए। इनमें से कितने द्वितीयक एमीन है ?

Ans. 4

15. In how many of the following compound. –OH group directly attached on the benzene ring ?

(1) Glycol (2) Glycerol (3) o-cresol (4) p-cresol
(5) Phenol (6) aniline (7) anisol (8) resorcinol
(9) catechol (10) Hydroquinone

निम्न में से कितने यौगिकों में –OH समूह बेंजीन वलय से सीधे जुड़ा है ?

(1) ग्लायकॉल (2) ग्लिसरॉल (3) o-क्रिसॉल (4) p-क्रिसॉल
(5) फिनॉल (6) एनिलीन (7) एनिसॉल (8) रेसोर्सिनॉल
(9) कैटेकॉल (10) हाइड्रोक्विनोन

Ans. 6

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TARGET : JEE (Main + Advanced) 2022

Course : VIKAAS(JA)

O/I-CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

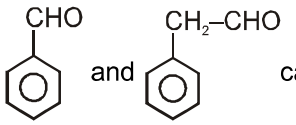
NO. A10

DPP No. # A10 (JEE-ADVANCED)

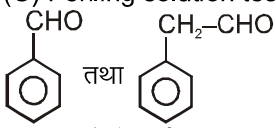
Total Marks : 44 **Max. Time : 24 min.**
Multiple choice objective ('–1' negative marking) Q.1 to Q.9 (4 marks, 2 min.)
Match the Following (no negative marking) Q.10 (8 marks, 6 min.)

1. Which of the following will decolourise highly diluted $KMnO_4$ solution ?
निम्न में से कौनसे यौगिक अत्यन्त तनु $KMnO_4$ विलयन को रंगहीन कर देता है :
(A) C_3H_8 (B) CH_4 (C*) C_2H_2 (D*) C_2H_4

Sol. C_2H_4 has one C=C while C_2H_2 has one Carbon-Carbon triple bond.
C_2H_4 एक C=C रखता है। जबकि C_2H_2 एक कार्बन–कार्बन त्रिबन्ध रखता है।

2. 

cannot be distinguished by :
(A*) Iodoform test (B*) Tollen's test
(C) Fehling solution test (D*) 2,4-DNP test



को किसके द्वारा विभेदित नही कर सकते है :
(A*) आयोडोफॉर्म परीक्षण (B*) टॉलेन परीक्षण (C) फेहलिंग परीक्षण (D*) 2,4-DNP परीक्षण

3. The test that can be used to distinguish between 1-propanol and 2-propanol :
(A*) Lucas test (B*) Iodoform test (C*) Victor mayer test (D) Carbyl amine test
निम्न में से किस परीक्षण द्वारा 1-प्रोपेनॉल तथा 2-प्रोपेनॉल के मध्य विभेदन किया जा सकता है :
(A*) ल्यूकॉस परीक्षण (B*) आयोडोफॉर्म परीक्षण (C*) विक्टर–मेयर परीक्षण (D) कार्बिल–एमीन परीक्षण

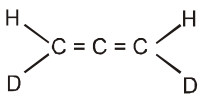
Sol. Carbyl amine test is used to distinguish amines.
एमीनों के मध्य विभेदन करने के लिए कार्बिल–एमीन परीक्षण का उपयोग किया जाता है।

4. Test to differentiate between (CH_3OH) and (Ph-OH) is/are :
(A*) Victor mayer test (B*) Neutral $FeCl_3$ (C*) Br_2/H_2O (D) Na metal
किस परीक्षण द्वारा (CH_3OH) तथा (Ph-OH) के मध्य विभेदन किया जा सकता है/हैं–
(A*) विक्टर–मेयर परीक्षण (B*) उदासीन $FeCl_3$ (C*) Br_2/H_2O (D) Na धातु

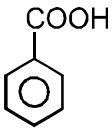
5. What is/are the structure of a compound ($C_3H_2D_2$) which decolourise bromine water.
निम्न में से कौनसी संरचना यौगिक ($C_3H_2D_2$) की है जो ब्रोमीन जल को रंगहीन करती है।

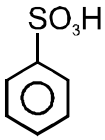
(A*)

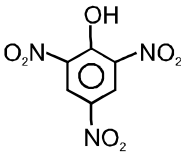
(B*)

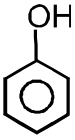
(C*) $CHD_2 - C \equiv CH$
(D*) 

6. Which of the following compound will give positive test with $NaHCO_3$?
निम्न मे से कौनसे यौगिक $NaHCO_3$ के साथ कौनसा यौगिक धनात्मक परीक्षण देता है ?

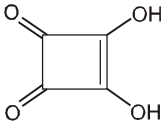
(A*) 

(B*) 

(C*) 

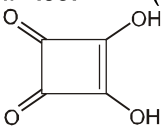
(D) 

Sol. Phenol is weaker acid as compare to H_2CO_3.
हल : फिनॉल, H_2CO_3 से दुर्बल अम्ल है।

7. Which of the following test will be given by 

(squaric acid)

(A*) Br_2 water test (B*) 2, 4-DNP test (C*) Neutral $FeCl_3$ (D) Tollen's test

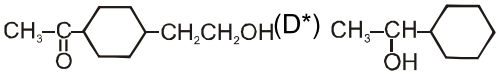
निम्न में से कौनसे परीक्षण स्क्वेरिक अम्ल 

देता है।

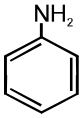
(A*) Br_2 जल परीक्षण (B*) 2, 4-DNP परीक्षण (C*) उदासीन $FeCl_3$ (D) टॉलेन परीक्षण

Sol. Terminal alkyne and –CH=O group gives +ve test with tollens reagent.
अन्तस्तथ एल्काईन तथा –CH=O समूह टॉलेन अभिकर्मक के साथ धनात्मक परिक्षण देते हैं।

8. Which of the following will give positive iodoform test.
निम्न में से कौन धनात्मक आयडोफार्म परीक्षण देते है।

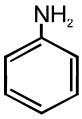
(A) $CH_3-\underset{\underset{O}{\|}}{C}-OH$ (B*) $Ph-\underset{\underset{O}{\|}}{C}-CH_3$ (C*) 

9. Compound giving offensive smell on heating with chloroform and alkali

(A*) CH_3-NH_2 (B*) 

(C) CH_3-NO_2 (D*) $Ph-CH_2-NH_2$

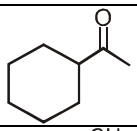
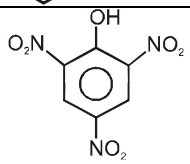
एक यौगिक जो क्लोरोफॉर्म तथा क्षार के साथ गर्म करने पर तीव्र असहनीय गंध युक्त यौगिक देता है, यौगिक है।

(A*) CH_3-NH_2 (B*) 

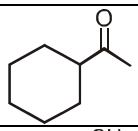
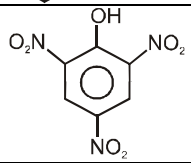
(C) CH_3-NO_2 (D*) $Ph-CH_2-NH_2$

Sol. Aniline and 1° amine on heating with chloroform and alkali gives offensive smell.
Sol. एनिलीन एवं 1° एमीन क्लोरोफार्म तथा क्षार के साथ गर्म करने पर तीव्र असहनीय गंध युक्त यौगिक देते है।

10. Match the given compounds in Column-I with their appropriate descriptions given in Column-II.

	Column-I		Column-II
(A)	$CH_3-\underset{\underset{OH}{\vert}}{CH}-CH_3$	(p)	It evolve CO_2 gas with $NaHCO_3$
(B)		(q)	It gives iodoform test
(C)		(r)	It gives Lucas reagent test .
(D)	Reductive ozonolysis products of Benzene	(s)	It gives Tollen`s test
		(t)	It gives 2,4 DNP test

कॉलम -I में दिये गये यौगिकों को कॉलम-II के उचित विवरण से सुमेलित कीजिये।

	कॉलम-I		कॉलम-II
(A)	$CH_3-\underset{\underset{OH}{\vert}}{CH}-CH_3$	(p)	$NaHCO_3$ के साथ CO_2 गैस निष्कासित करता है।
(B)		(q)	यह आयोडोफार्म परीक्षण देता है।
(C)		(r)	यह ल्युकॉस परीक्षण देता है।
(D)	बेन्जीन का अपचयित ओजोनीकरण उत्पाद	(s)	यह टॉलेन परीक्षण देता है।
		(t)	यह 2,4 DNP परीक्षण देता है।

Ans. (A) q,r (B) q,t (C) p (D) s , t