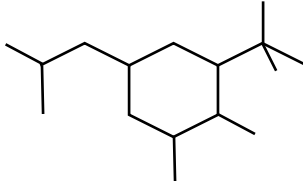


EXERCISE - O

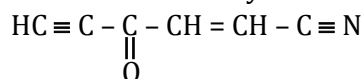
SINGLE CORRECT TYPE QUESTIONS

Classification of organic compound & Degree of unsaturation

1. **Statement 1** : Urea is an organic compound.
Statement 2 : It can be synthesized only by living organism.
 (A) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.
 (B) Statement-1 is true, statement-2 is true and statement-2 is NOT the correct explanation for statement-1.
 (C) Statement-1 is true, statement-2 is false.
 (D) Statement-1 is false, statement-2 is true. CIU081
2. Alicyclic compounds are :
 (A) Aromatic compounds (B) Aliphatic cyclic compounds
 (C) Heterocyclic compounds (D) None of the above CIU082
3. Total number of σ and π -bonds present in benzene is:
 (A) 5π and 10σ (B) 3π and 10σ (C) 3π and 12σ (D) 5π and 14σ CIU083
4. Number of 1° , 2° , 3° and 4° C present in compound are respectively 
 (A) 7, 4, 5 and 1 (B) 7, 3, 4 and 1 (C) 7, 3, 5 and 1 (D) 7, 4, 4 and 1 CIU084
5. A group closely related compounds which can be expressed by a general formula & in which two consecutive members differ by 14 in their molecular masses is called
 (A) a heterogeneous series (B) a homologous series
 (C) a homogeneous series (D) an electrochemical series CIU087
6. The higher homologue of dimethylamine ($\text{CH}_3 - \text{NH} - \text{CH}_3$) has the structure :-
 (A) $\text{CH}_3 - \underset{\text{CH}_3}{\text{N}} - \text{CH}_3$ (B) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{NH}_2$ (C) $\text{CH}_3 - \text{NH} - \text{CH}_2 - \text{CH}_3$ (D) $\text{CH}_3 - \underset{\text{NH}_3}{\text{CH}} - \text{CH}_3$ CIU089
7. Which of the following is the first member of ester homologous series?
 (A) Ethyl ethanoate (B) Methyl ethanoate (C) Methyl methanoate (D) Ethyl methanoate CIU090
8. The number of olefinic bonds in the given compound is/are :-

$$\text{H}_2\text{C} = \text{CH} - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{CH} = \text{CH} - \text{CH} = \text{NH}$$
 (A) 2 (B) 3 (C) 1 (D) 4 CIU092

9. The number of acetylenic bonds in the given compound is/are :



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

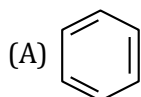
CIU093

10. Match the column

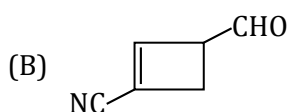
CIU095

Compound

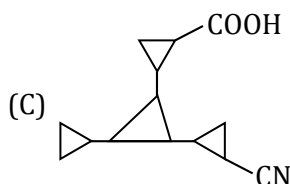
DOU



(P) 2



(Q) 4



(R) 5



(S) 7

(A) A → Q, B → P, C → R, D → S

(B) B → P, B → S, C → P, D → R

(C) A → Q, B → R, C → S, D → P

(D) D → Q, B → R, C → P, D → S

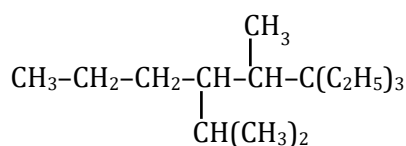
11. Which of the followings is incorrect name :-

- (A) Isopropyl (B) Ter.butyl (C) Neobutyl (D) Neopentyl

CIU098

IUPAC Nomenclature

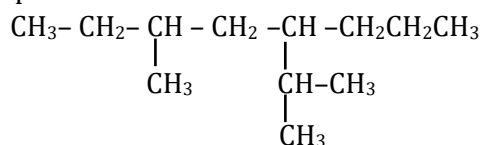
12. The correct IUPAC name of the compound is :



- (A) 3,3-Diethyl-4-methyl-5-(1-methyl ethyl) octane
(B) 6,6-Diethyl-4-methyl-5-isopropyloctane
(C) 6,6-Diethyl-3-methyl-5-(1-methylethyl) octane
(D) 6,6-Diethyl-4-isopropyl-5-methyloctane

CIU100

13. IUPAC name of the compound

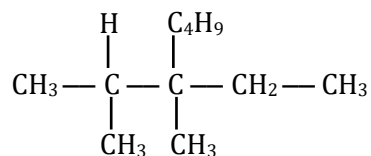


- (A) 4-Isopropyl-6-methyloctane (B) 3-Methyl-5-(1-methylethyl) octane
(C) 3-Methyl-5-isopropyloctane (D) 6-Methyl-4-(1-methylethyl) octane

CIU101

14. C_5H_{12} has a symmetrical structure with one quaternary carbon. Its IUPAC name is :
 (A) n-pentane (B) 2-methylbutane (C) 2,2-dimethylpropane (D) 3-methylbutane
CIU102

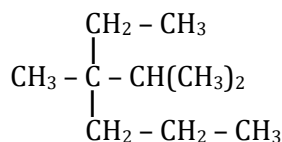
15. IUPAC name of is:



- (A) 3,4,4-Trimethylheptane (B) 4-Ethyl-3,4-dimethyloctane
 (C) 2-Butyl-2-methyl-3-ethylbutane (D) None of these

CIU104

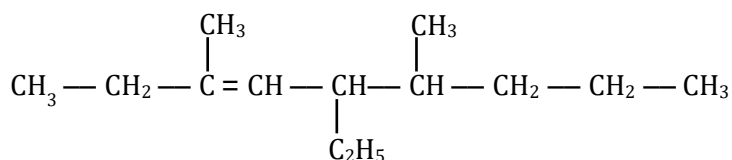
16. The IUPAC name of the given structure is



- (A) 3-Methyl-3-isopropylhexane (B) 3-Isopropyl-3-methylhexane
 (C) 3-Ethyl-2,3-dimethylhexane (D) 2,3-Dimethyl-3-ethylhexane

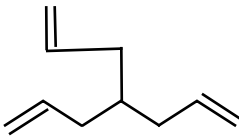
CIU105

17. The correct IUPAC name of the compound



- (A) 5-Ethyl-3,6-dimethylnon-3-ene (B) 5-Ethyl-4,7-dimethylnon-3-ene
 (C) 4-Methyl-5,7-diethyloct-2-ene (D) 2,4-Ethyl-5-methyloct-2-ene

CIU111

18. The IUPAC name of the compound  is :

- (A) 4-Prop-1-enylhepta-1,6-diene (B) 4-Propylidenehepta-1,6-diene
 (C) 4-Propenylhepta-1,6-diene (D) 4-[Prop-2-enyl]hepta-1,6-diene

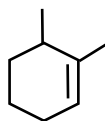
CIU114

19. The IUPAC name  $\text{CH} = \text{CH} - \text{CH}(\text{CH}_3) - \text{CH}_2 - \text{CH}_3$ of is:

- (A) 1-Cyclohexyl-3-methylpent-1-ene (B) 3-Methyl-5-cyclohexylpent-1-ene
 (C) 1-Cyclohexyl-3-ethylbut-1-ene (D) 1-Cyclohexyl-3,4-dimethylbut-1-ene

CIU115

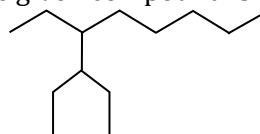
20. The IUPAC name of the structure is :



- (A) 1,2-Dimethylcyclohexane (B) 1,6-Dimethylcyclohexene
(C) 1,2-Dimethylcyclohex-2-ene (D) 2,3-Dimethylcyclohexane

CIU116

21. The IUPAC name of the given compound is -



- (A) Octylcyclopentane (B) 3-Cyclopentyl-octane
(C) Cyclopentane-octane (D) 6-Cyclopentyl-octane

CIU120

22. The IUPAC name for $\text{CH}_3-\text{C}(=\text{O})-\text{NH}_2$ and $\text{CH}_3-\text{C}(=\text{O})-\text{Cl}$ are :-

- (A) 1-Amino-1-oxo ethane, 1-chloro ethanal (B) 1-Amino ethanal, acetyl chloride
(C) 1-Oxoethanamine, ethanoyl chloride (D) Ethanamide, Ethanoyl chloride

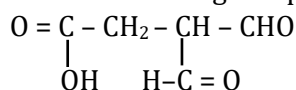
CIU124

23. The IUPAC name of is :-

- (A) 3,4-Dimethylpentanoylchloride (B) 1-Chloro-1-oxo-2,3-dimethylpentane
(C) 2-Ethyl-3-methylbutanoylchloride (D) 2,3-Dimethylpentanoylchloride

CIU125

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



- (A) 3,3-Diformylpropanoic acid (B) 3-Formyl-4-oxo-butanoic acid
(C) 3,3-Dioxo propanoic acid (D) 3,3-Dicarbaldehyde propanoic acid

CIU130

25. The IUPAC name of compound $\text{CH}_3-\text{C}(=\text{O})-\text{CH}(\text{CH}_3)-\text{CH}(\text{CHO})-\text{CH}(\text{CH}_3)-\text{CH}_3$ is:

- (A) 3,5-Dimethyl-4-Formylpentanone (B) 1-Isopropyl-2-methyl-4-oxobutanal
(C) 2-Isopropyl-3-methyl-4-oxopentanal (D) None of the above

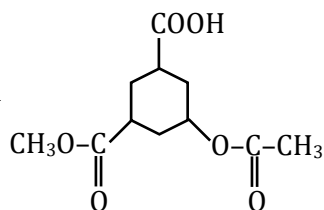
CIU131

26. The IUPAC name of compound $\text{CH}_3-\text{C}(\text{OH})(\text{COOH})=\text{C}(\text{NH}_2\text{Cl})-\text{CH}(\text{CH}_3)-\text{H}$ is :

- (A) 2-Amino-3-chloro-2-methylpent-2-enoic acid
(B) 3-Amino-4-chloro-2-methylpent-2-enoic acid
(C) 4-Amino-3-chloro-2-methylpent-2-enoic acid
(D) All of the above

CIU132

27. The IUPAC name of compound



- (A) 3-Carbonyl methoxy -5- ethanoyl oxy cyclohexanoic acid
 (B) 3-Ethanoyl oxy -5- methoxy carbonyl cyclohexane carboxylic acid
 (C) 5-Ethanoyl oxy -5- methoxy carbonyl cyclohexanoic acid
 (D) 3-Methoxy carbonyl -5- ethanoyl oxy cyclohexane carboxylic acid

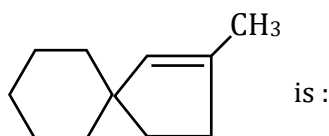
CIU133

28. The IUPAC name of $\text{BrCH}_2 - \underset{\text{CONH}_2}{\text{CH}} - \text{CO} - \text{CH}_2 - \text{CH}_2\text{CH}_3$ is:

- (A) 2-Bromomethyl-3-oxohexanamide (B) 1-Bromo-2-amino-3-oxohexane
 (C) 1-Bromo-2-amino-n-propyl ketone (D) 3-Bromo-2-propyl propanamide

CIU135

29. The IUPAC name of the compound

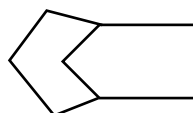


is :

- (A) 2-Methylspiro[4.5]dec-1-ene (B) 2-Methylspiro[5.4]dec-1-ene
 (C) 2-Methylspiro[4.5]dec-2-ene (D) 2-Methylspiro[5.4]dec-2-ene

CIU139

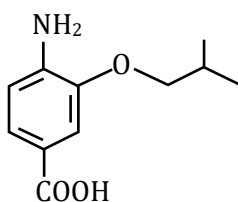
30. The IUPAC name of the compound given below is



- (A) Bicyclo[3.2.1]octane (B) Bicyclo[3.2.2]octane
 (C) Spiro[2.2]octane (D) None of these

CIU140

31. What is IUPAC name of the compound given below ?



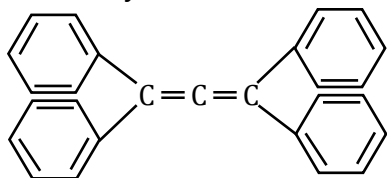
- (A) 4-Carboxy-2-(2'-methylpropoxy)aniline
 (B) 4-Amino-5-(2'-methylpropoxy)benzoic acid
 (C) 4-Amino-3-(2'-methylpropoxy)benzoic acid
 (D) 4-Amino-3-(2'-methylpropoxy)carboxybenzene

CIU145

EXERCISE - S

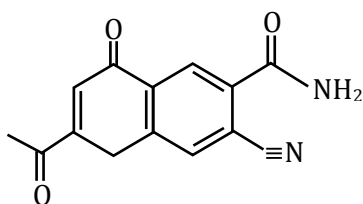
Classification of organic compound & Degree of unsaturation

1. How many 2° carbon in the following ?



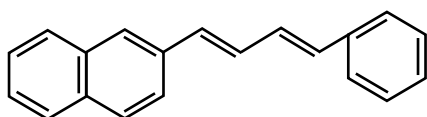
CIU147

2. Find out the double bond equivalent (DBE) value of the given following compound:



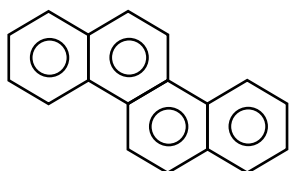
CIU148

3. The degree of unsaturation in the following compound is.

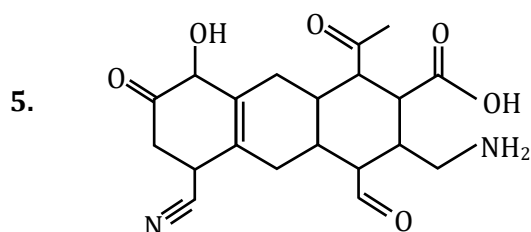


CIU149

4. Total number of DBE in :



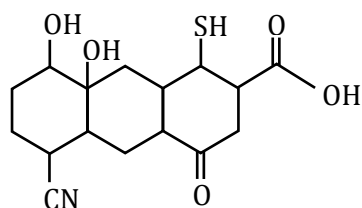
CIU150



Sum of types of functional group and DBE value for given compound is X so the value of X - 10 is

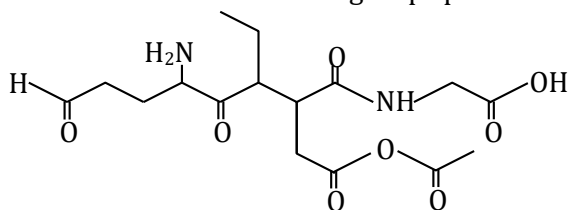
CIU151

6. Total number of different functional group in the following compound.



CIU152

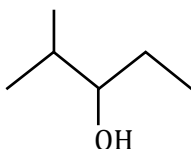
7. Total number of functional groups present in the following compound is :-



CIU096

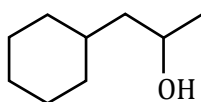
IUPAC Nomenclature

8. When IUPAC name of following compound is given then functional group and substituent gets x and y number so the sum of (x + y) will be



CIU153

9. Total number of carbon atom present in parent chain is .



CIU154

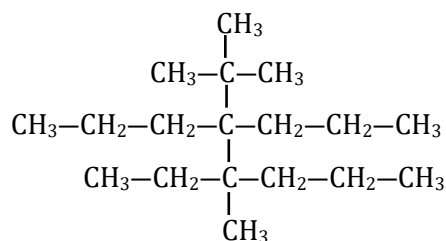
- 10.

When IUPAC name of following compound is given, then double bond and substituent gets respectively.

(x and y) number so the sum of (x + y) will be

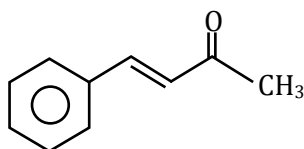
CIU155

11. Total number of carbon atoms present in parent chain is .



CIU156

12. How many carbon atom present in the parent chain in the given following compound?



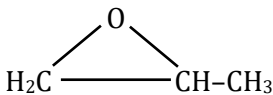
CIU157

EXERCISE - JEE (Main) PYQ

- The IUPAC name of neopentane is :- [AIEEE-2009]

(1) 2-Methylpropane (2) 2, 2-Dimethylbutane
(3) 2-Methylbutane (4) 2, 2-Dimethylpropane

CIU038
- The IUPAC name of the compound is :- [AIEEE -(Online)2012]

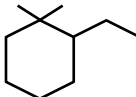


(1) 1, 2-Epoxypropane (2) Propyleneoxide
(3) 1, 2-Oxopropane (4) 1, 2-Propoxide

CIU039
- The hydrocarbon with seven carbon atoms containing a neopentyl and a vinyl group is :

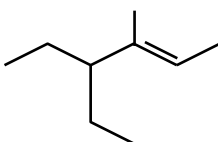
(1) 4,4-Dimethylpentene (2) 2,2-Dimethyl-3-pentene
(3) Isopropyl-2-butene (4) 2,2-Dimethyl-4-pentene

[JEE (Main) (Online)2016]
CIU040
- The IUPAC name of the following compound is : [JEE (Main) (Online)2017]



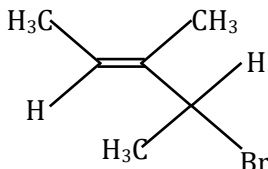
(1) 1-Ethyl-2,2-dimethylcyclohexane (2) 2,2-Dimethyl-1-ethylcyclohexane
(3) 1,1-Dimethyl-1,2-ethylcyclohexane (4) 2-Ethyl-1,1-dimethylcyclohexane

CIU041
- The IUPAC name of the following compound is : [JEE (Main) (Online) 2018]



(1) 4-Methyl-3-ethylhex-4-ene (2) 4,4-Diethyl-3-methylbut-2-ene
(3) 3-Ethyl-4-methylhex-4-ene (4) 4-Ethyl-3-methylhex-2-ene

CIU042
- What is the IUPAC name of the following compound? [JEE (Main) (Online)2019]

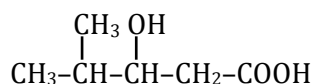


(1) 3-Bromo-1, 2-dimethylbut-1-ene
(2) 4-Bromo-3-methylpent-2-ene
(3) 2-Bromo-3-methylpent-3-ene
(4) 3-Bromo-3-methyl-1, 2-dimethylprop-1-ene

CIU043

7. The IUPAC name of the following compound is :

[JEE (Main) (Online) 2019]

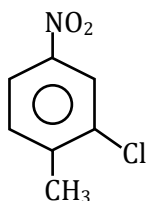


- (1) 2-Methyl-3-Hydroxypentan-5-oicacid
- (2) 4,4-Dimethyl-3-hydroxy butanoicacid
- (3) 3-Hydroxy-4 -methylpentanoicacid
- (4) 4-Methyl-3-hydroxypentanoicacid

CIU044

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

[JEE (Main) (Online) 2019]

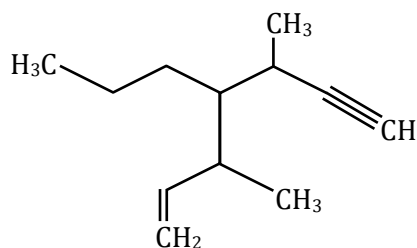


- (1) 5-Chloro-4-methyl-1-nitrobenzene
- (2) 2-Methyl-5-nitro-1-chlorobenzene
- (3) 3-Chloro-4-methyl-1-nitrobenzene
- (4) 2-Chloro-1-methyl-4-nitrobenzene

CIU045

9. The IUPAC name of the following compound is :

[JEE (Main) (Online) 2019]

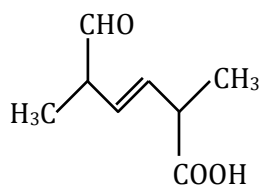


- (1) 3,5-Dimethyl-4-propylhept-6-en-1-yne
- (2) 3-Methyl-4-(3-methylprop-1-enyl)-1-heptyne
- (3) 3-Methyl-4-(1-methylprop-2-ynyl)-1-heptene
- (4) 3,5-Dimethyl-4-propylhept-1-en-6-yne

CIU046

10. The IUPAC name for the following compound is

[JEE (Main) 2020]

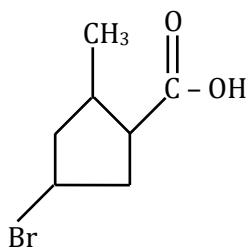


- (1) 2,5-Dimethyl-6-carboxy-hex-3-enal
- (2) 6-Formyl-2-methyl-hex-3-enoic acid
- (3) 2,5-Dimethyl-5-carboxy-hex-3-enal
- (4) 2,5-Dimethyl-6-oxo-hex-3-enoic acid

CIU047

11. The IUPAC name of the following compound is :

[JEE (Main) 2020]

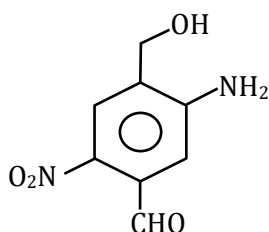


- (1) 4-Bromo-2-methylcyclopentanecarboxylic acid
- (2) 5-Bromo-3-methylcyclopentanoic acid
- (3) 3-Bromo-5-methylcyclopentanecarboxylic acid
- (4) 3-Bromo-5-methylcyclopentanoic acid

CIU048

12. The IUPAC name of the following compound is –

[JEE (Main) 2020]



- (1) 3-Amino-4-hydroxymethyl-5-nitrobenzaldehyde
- (2) 2-Nitro-4-hydroxymethyl-5-aminobenzaldehyde
- (3) 4-Amino-2-formyl-5-hydroxymethylnitrobenzene
- (4) 5-Amino-4-hydroxymethyl-2-nitrobenzaldehyde

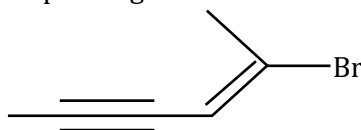
CIU049

13. The number of sp^2 hybridised carbons present in "Aspartame" is _____.

[JEE (Main) 2020]

CIU050

14. Choose the **correct** name for compound given below :



[JEE (Main) 2021]

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

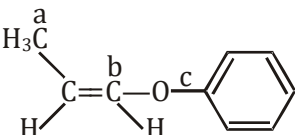
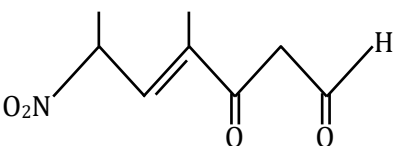
CIU051

15. The number of compound/s given below which contain/s $-COOH$ group is _____.

[JEE (Main) 2021]

- (1) Sulphanilic acid (2) Picric acid (3) Aspirin (4) Ascorbic acid

CIU158

16. In $\overset{1}{\text{CH}_2}=\overset{2}{\text{C}}=\overset{3}{\text{CH}}-\overset{4}{\text{CH}_3}$ molecule, the hybridization of carbon 1, 2, 3 and 4 respectively, are :
 [JEE (Main) 2021]
 (1) sp^3 , sp , sp^3 , sp^3 (2) sp^2 , sp^2 , sp^2 , sp^3
 (3) sp^2 , sp , sp^2 , sp^3 (4) sp^2 , sp^3 , sp^2 , sp^3
 CIU159
17. The total number of C–C sigma bond/s in mesityl oxide ($\text{C}_6\text{H}_{10}\text{O}$) is _____.
 (Round off to the Nearest Integer).
 [JEE (Main) 2021]
 CIU160
18. Mesityl oxide is a common name of :
 [JEE (Main) 2021]
 (1) 2,4-Dimethyl pentan-3-one (2) 3-Methyl cyclohexane carbaldehyde
 (3) 2-Methyl cyclohexanone (4) 4-Methyl pent-3-en-2-one
 CIU161
19. In the following molecules,

 Hybridisation of carbon a, b and c respectively are :
 [JEE (Main) 2021]
 (1) sp^3 , sp , sp (2) sp^3 , sp^2 , sp (3) sp^3 , sp^2 , sp^2 (4) sp^3 , sp , sp^2
 CIU162
20. The number of sigma bonds in
 $\text{H}_3\text{C}-\underset{\text{H}}{\underset{|}{\text{C}}}=\text{CH}-\text{C}\equiv\text{C}-\text{H}$ is _____.
 [JEE (Main) 2021]
 CIU163
21. The correct IUPAC name of the following compound is :

 [JEE (Main) 2022]
 (1) 4-methyl-2-nitro-5-oxohept-3-enal
 (2) 4-methyl-5-oxo-2-nitrohept-3-enal
 (3) 4-methyl-6-nitro-3-oxohept-4-enal
 (4) 6-formyl-4-methyl-2-nitrohex-3-enal
 CIU052
22. The IUPAC name of ethylidene chloride is :-
 [JEE (Main) 2022]
 (1) 1-Chloroethene (2) 1-Chloroethyne
 (3) 1,2-Dichloroethane (4) 1,1-Dichloroethane
 CIU164
23. The number of sp^3 hybridised carbons in an acyclic neutral compound with molecular formula $\text{C}_4\text{H}_5\text{N}$ is :
 [JEE (Main) 2022]
 CIU165

24. Match List-I with List-II.

[JEE (Main) 2022]

	List-I		List-II
(A)		(I)	Spiro compound
(B)		(II)	Aromatic compound
(C)		(III)	Non-planar Heterocyclic compound
(D)		(IV)	Bicyclo compound

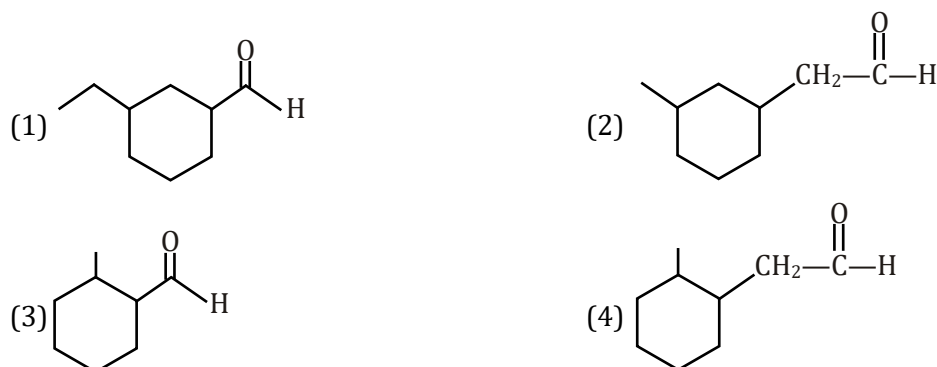
Choose the correct answer from the options given below :

- (1) (A) – (II), (B) – (I), (C) – (IV), (D) – (III)
 (2) (A) – (IV), (B) – (III), (C) – (I), (D) – (II)
 (3) (A) – (III), (B) – (IV), (C) – (I), (D) – (II)
 (4) (A) – (IV), (B) – (III), (C) – (II), (D) – (I)

CIU166

25. Correct structure of γ -methylcyclohexane carbaldehyde is :

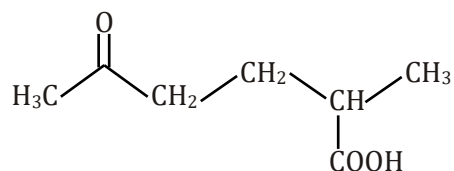
[JEE (Main) 2022]



CIU167

26. The correct IUPAC nomenclature for the following compound is

[JEE (Main) 2023]

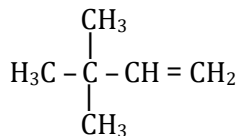


- (1) 5-Formyl-2-methylhexanoic acid
 (2) 2-Methyl-5-oxohexanoic acid
 (3) 2-Formyl-5-methylhexan-6-oic acid
 (4) 5-Methyl-2-oxohexan-6-oic acid

CIU168

EXERCISE - JEE (Advanced) PYQ

1. The IUPAC name of the compound having the formula is : [JEE (Advanced) 1984]



- (A) 3,3,3-trimethyl-1-propene (B) 1,1,1-trimethyl-2-propene
(C) 3,3-dimethyl-1-butene (D) 2,2-dimethyl-3-butene

CIU073

2. The IUPAC name of the compound $\text{CH}_2=\text{CH}-\text{CH}(\text{CH}_3)_2$ is : [JEE (Advanced) 1987]

- (A) 1,1-dimethyl-2-propene (B) 3-methyl-1-butene
(C) 2-vinyl propane (D) None of the above

CIU074

3. The number of sigma and pi-bonds in 1-butene 3-yne are: [JEE (Advanced) 1989]

- (A) 5 sigma and 5 pi (B) 7 sigma and 3 pi
(C) 8 sigma and 2 pi (D) 6 sigma and 4 pi

CIU075

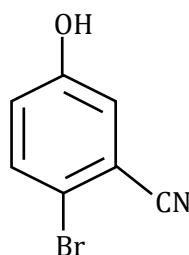
4. The IUPAC name of $\text{C}_6\text{H}_5\text{COCl}$ is

[JEE (Advanced) 2006]

- (A) Benzoyl chloride (B) Benzene chloro ketone
(C) Benzene carbonyl chloride (D) Chloro phenyl ketone

CIU076

5. The IUPAC name of the following compound is : [IIT-2009]



- (A) 4-Bromo-3-cyanophenol
(B) 2-Bromo-5-hydroxybenzonitrile
(C) 2-Cyano-4-hydroxybromobenzene
(D) 6-Bromo-3-hydroxybenzonitrile

CIU077

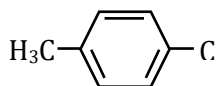
6. In allene (C_3H_4), the type(s) of hybridisation of the carbon atoms is (are)

[JEE (Advanced) 2012]

- (A) sp and sp^3 (B) sp and sp^2
(C) only sp^2 (D) sp^2 and sp^3

CIU078

7. The IUPAC name(s) of the following compound is(are) :



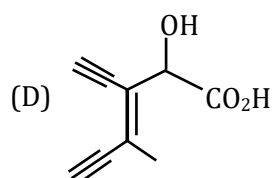
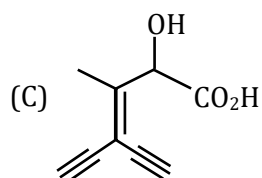
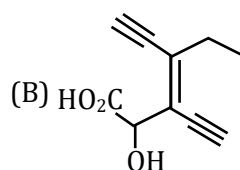
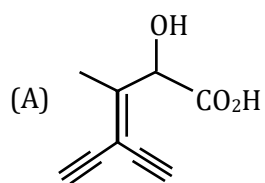
[JEE (Advanced) 2017]

- (A) 4-Methylchlorobenzene
(B) 4-Chlorotoluene
(C) 1-Chloro-4-methylbenzene
(D) 1-Methyl-4-chlorobenzene

CIU079

8. Which one of the following structures has the IUPAC name 3-ethynyl-2-hydroxy-4-methylhex-3-en-5-ynoic acid ?

[JEE (Advanced) 2020]



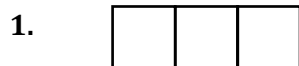
CIU080

JEE (Main) Practice Paper

This paper is for yourself practice and assessment the discussion of this paper is optional though you can see PDF solutions or video solutions or solutions in hardcopy whichever is provided.

SECTION-A

- This section contains **TWENTY** questions.
- Each question has **FOUR** options (1), (2), (3) and (4). **ONLY ONE** of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories :
Full Marks : +4, if only the bubble corresponding to the correct option is darkened.
Zero Marks : 0, if none of the bubbles is darkened.
Negative Marks : -1 in all other cases



Select the correct statement about above compound.

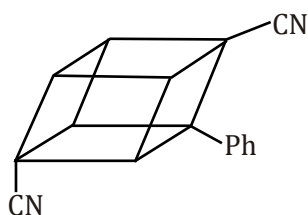
- (1) It is having four 2° & four 3° carbons
- (2) It is having three 1°, six 2°, three 3° & two 4° carbons
- (3) It is having three 1°, three 2° & three 3° carbons
- (4) None of these

CIU001

2. All the members of homologous series have same :
- (1) general molecular formula and functional group
 - (2) molecular weight
 - (3) molecular formula
 - (4) None of these

CIU002

3. DOU of the following compound -



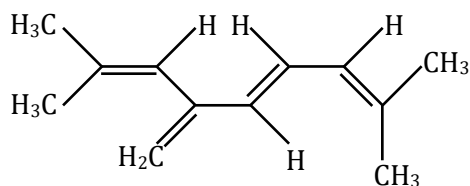
- (1) 11
- (2) 13
- (3) 15
- (4) 17

CIU003

4. How many 1°, 2°, 3° C atoms does 1, 3, 5-Trimethyl cyclohexane have?
- (1) 3, 6, 0
 - (2) 3, 4, 2
 - (3) 0, 3, 6
 - (4) 3, 3, 3

CIU004

5. The total number of π -bond electrons in the following structure is :-



- (1) 8 (2) 12 (3) 16 (4) 4

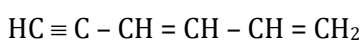
CIU005

6. The third member of the family of alkenynes has the molecular formula :-

- (1) C_6H_6 (2) C_6H_6 (3) C_6H_8 (4) C_4H_4

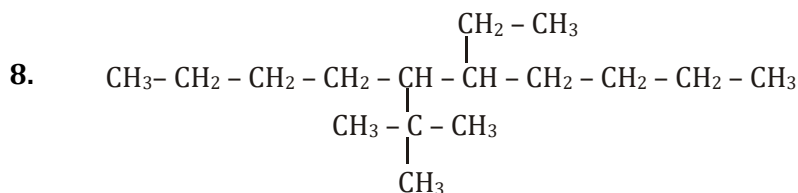
CIU006

7. Find out the incorrect statement about given molecule.



- (1) All the carbons in given molecule are not in same plane
(2) IUPAC name is hexa-1,3-dien-5-yne
(3) It has 4 sp^2 hybrid carbons and 2 sp hybrid carbons
(4) All the carbons in given molecule are in same plane

CIU007



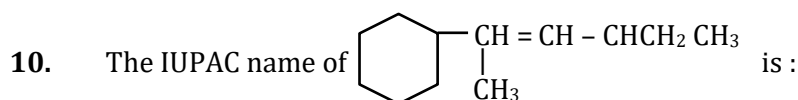
- (1) 5-(1, 1-Dimethyl Ethyl)-6-Ethyl decane
(2) 5-Ethyl-6-(1, 1-Dimethyl Ethyl) decane
(3) 6-Ethyl-5-(1, 1-Dimethyl Ethyl) decane
(4) 6-(1, 1-Dimethyl Ethyl)-5 Ethyl decane

CIU008

9. All the following IUPAC names are correct except:

- (1) 1-Chloro-1-ethoxy propane
(2) 1-Amino-1-ethoxypropane
(3) 1-Ethoxy-2-propanol
(4) 1-Ethoxy-1-propanamine

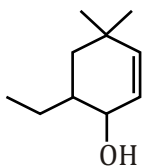
CIU009



- (1) 2-Cyclohexylhex-2-ene
(2) 3-Methyl-5-cyclohexylpent-1-ene
(3) 1-Cyclohexyl-3-ethylbut-1-ene
(4) 1-Cyclohexyl-3,4-dimethyl-but-1-ene

CIU010

11. IUPAC name of compound is :



- (1) 5-ethyl-3,3-dimethylcyclohex-en-6-ol
 (2) 6-ethyl-4,4-dimethylcyclohex-2enol
 (3) 2-ethyl-4,4-dimethylcyclohex-5-enol
 (4) 6-ethyl-4,4-dimethylcyclohexenol

CIU011

12. The IUPAC name of is :

- (1) 2-Chlorocarbonyl ethylbenzoate
 (2) 2-Carboxyethyl benzoyl chloride
 (3) Ethyl-2-chlorobenzoate
 (4) Ethyl-1-(chlorocarbonyl)benzoate

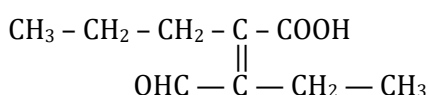
CIU012

13. The IUPAC name of $C_6H_5CH=CH-COOH$ is :

- (1) Cinnamic acid
 (2) 1-Phenyl-2-carboxy ethane
 (3) 3-Phenylprop-2-enoic acid
 (4) Dihydroxy-3-phenylpropionic acid

CIU013

14. The number of carbon atoms in the principle carbon chain of the given compound is :-



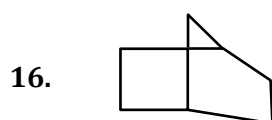
- (1) 7 (2) 5 (3) 4 (4) 6

CIU014

15. The correct IUPAC name of compound $\text{CH}_3-\text{CH}_2-\underset{\text{O}}{\underset{\parallel}{\text{C}}}-\underset{\text{CN}}{\underset{|}{\text{CH}}}-\text{CHO}$ is

- (1) 2-Cyano-3-oxopentanal
 (2) 2-Formyl-3-oxopentanenitrile
 (3) 2-Cyano-1, 3-pentanedione
 (4) 1, 3-Dioxo-2-cyanopentane

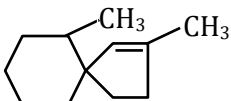
CIU015



What is the IUPAC name of the above compound ?

- (1) Cyclo[1.2.2]heptane (2) Bicyclo[1.2.2]heptane
 (3) Bicyclo[2.2.1]heptane (4) Cyclo[2.2.1]heptane

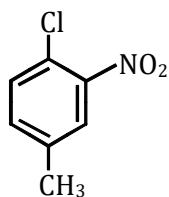
CIU016

17. The IUPAC name of the compound,  is :

- (1) 2,6-Dimethylspiro[4.5]dec-1-ene
- (2) 2,7-Dimethylspiro[5.4]dec-1-ene
- (3) 2,10-Dimethylspiro[4.5]dec-2-ene
- (4) 2-Methylspiro[5.4]dec-2-ene

CIU017

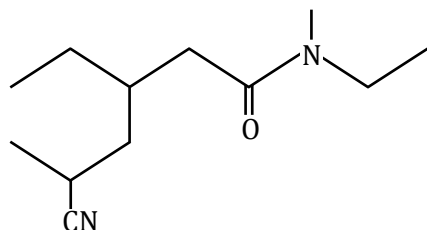
18. The IUPAC name for



- (1) 1-Chloro-2-nitro-4-methylbenzene
- (2) 1-Chloro-4-methyl-2-nitrobenzene
- (3) 2-Chloro-1-nitro-5-methylbenzene
- (4) m-Nitro-p-chlorotoluene

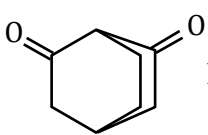
CIU018

19. What is the correct IUPAC name of the following compound ?



- (1) 3-(2-Cyanopropyl)-N-ethyl-N-methylpentanamide
- (2) N-Ethyl-3-(2-cyanopropyl)-N-methylpentanamide
- (3) N, 3-Diethyl-5- cyano-N-methylhexanamide
- (4) 5-Cyano-N, 3-diethyl-N-methylhexanamide

CIU019

20. The compound  has been named in IUPAC as

- (1) Bicyclo[1.2.1]octane-2, 6-dione
- (2) Bicyclo[1.2.2]octane-2, 6-dione
- (3) Bicyclo[2.2.2]octane-2, 6-dione
- (4) Bicyclo[1.1.1]octane-2, 6-dione

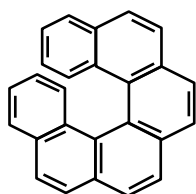
CIU020

SECTION-B

- This section will have **TEN questions**. Candidate can choose to attempt any 5 questions out of these 10 questions. In case if candidate attempts more than 5 questions, first 5 attempted questions will be considered for marking.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value (Answer should be rounded off to the nearest integer).
- Answer to each question will be evaluated according to the following marking scheme:
 Full Marks : +4, if only correct answer is given.
 Zero Marks : 0, if no answer is given.
 Negative Marks :-1 for incorrect answer

1. Calculate molecular weight of the lowest alkane containing a sequence of 1°, 2°, 3° and 4° carbon atom ? CIU021

2. Calculate D.O.U. ?



CIU022

3.
$$\text{CH}_3 - \text{CH}_2 - \underset{\text{CH}_3}{\overset{\text{CH}_3}{\text{C}}} - \underset{\text{CH}_3}{\text{CH}} - \underset{\text{CH}_3}{\text{CH}} - \text{CH}_2 - \text{CH}_3$$

Calculate lowest set of locant ?

CIU023

- 4.

How many functional group are presents ?

CIU024

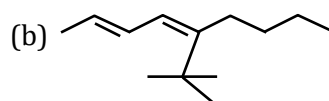
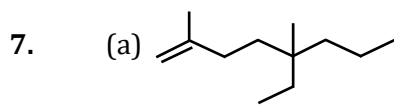
- 5.

Number of 1°, 2°, 3° and 4°C present in compound ?

CIU025

6. Isooctane contains 1° , 2° , 3° , 4° C respectively write answer as sum of all degrees of carbon ?

CIU026



Total number of carbon in principal carbon chain ?

CIU027

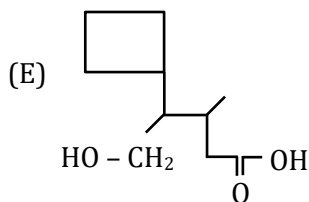
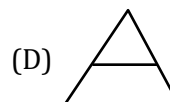
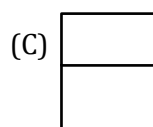
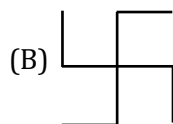
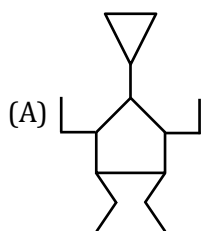
8. D.B.E. in Benzoic acid is ?

CIU028

9. Find the total number of sigma bond'(s) in naphthalene ?

CIU029

10. Total number of carbon in P.C.C. ?



CIU030

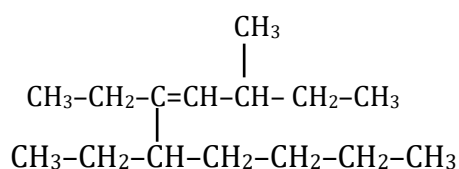
JEE (Advanced) Practice Paper

This paper is for yourself practice and assessment the discussion of this paper is optional though you can see PDF solutions or video solutions or solutions in hardcopy whichever is provided.

SECTION-I

- This section contains **TEN** questions.
- Each question has FOUR options (A), (B), (C) and (D). ONLY ONE of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories:
 Full Marks : +3, if only the bubble corresponding to the correct option is darkened.
 Zero Marks : 0, if none of the bubbles is darkened.
 Negative Marks : -1, in all other cases

1. The correct IUPAC name of the compound is-



- (A) 5,6-Diethyl-8-methyldec-6-ene
 (B) 5,6-Diethyl-3-methyldec-4-ene
 (C) 6-Butyl-5-ethyl-3-methyloct-4-ene
 (D) 2,4,5-Triethyl-3-ene

CIU053

2. The IUPAC name of the compound $\text{H}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}=\text{CH}-\underset{\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_3}{\text{CH}}-\text{CH}=\text{CH}_2$ is -

- (A) 4-Butylhexa-2,5-dien-1-al (B) 5-Vinyloct-3-en-1-al
 (C) 5-Vinyloct-5-en-8-al (D) 3-Butylhexa-1,4-dien-8-al

CIU054

3. The IUPAC name of the compound $\text{CH}_3\text{CH}=\text{CHCH}=\text{CHC}\equiv\text{CCH}_3$ is:
 (A) Octa-4,6-diene-2-yne (B) Octa-2,4-diene-6-yne
 (C) Oct-2-yne-4,6-diene (D) Oct-6-yne-2,4-diene

CIU055

4. The IUPAC name of $\text{H}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_2-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{C}(=\text{O})-\text{CH}=\text{CH}_2$

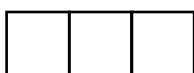
- (A) 2-Formyl ethanoic propanoic anhydride
 (B) 2-Oxo-propanoic prop-2-enoic anhydride
 (C) Prop-2-enoic-2-formyl propanoic anhydride
 (D) 2-Formyl ethanoic prop-2-enoic anhydride

CIU056

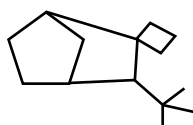
SECTION-II

- This section contains **FOUR** questions.
- Each question has **FOUR** options for correct answer(s). **ONE OR MORE THAN ONE** of these four option(s) is (are) correct option(s).
- For each question, choose the correct option(s) to answer the question.
- **Answer :** to each question will be evaluated according to the following marking scheme:
Full Marks : +4 If only (all) the correct option(s) is (are) chosen.
Partial Marks : +3 If all the four options are correct but ONLY three options are chosen.
Partial Marks : +2 If three or more options are correct but ONLY two options are chosen, both of which are correct options.
Partial Marks : +1 If two or more options are correct but ONLY one option is chosen and it is a correct option.
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered).
Negative Marks : -2 In all other cases.

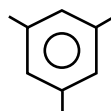
11.



I



II



III

Select the correct statement about, I, II & III compounds.

- (A) I is having four 2° & four 3° carbons
 (B) II is having three 1°, six 2°, three 3° & two 4° carbons
 (C) III is having three 1°, three 2° & three 3° carbons
 (D) All are homocyclic compounds

CIU063

12. Which of the following statements is/are wrong ?

- (A) C_nH_{2n} is the general formula of alkanes.
 (B) In homologous series, all members have the same physical properties.
 (C) IUPAC means International Union of Physics and Chemistry
 (D) Normal butane contains two 1° C atoms and two 2° C atoms.

CIU064

13. Which of the following statements is/are wrong ?

- (A) Acetic acid is the systematic name of vinegar.
 (B) neopentane is an unsaturated compound.
 (C) Prefixes like n-, iso, sec-, tert, neo-, etc., are used in IUPAC system.
 (D) The systematic names of acids are formed by dropping -e of the name of parent alkane and adding -oic acid.

CIU065

14. Which of the following statements is/are correct ?

- (A) The trivial names of organic compounds are called common names.
 (B) The systematic names of organic compounds are obtained from the IUPAC system.
 (C) The systematic names of alkanes are based on the number of C atoms in the longest continuous chain of C atoms.
 (D) The maximum number of functional groups must be included in the C atom chain selected even if it does not satisfy the longest chain rule.

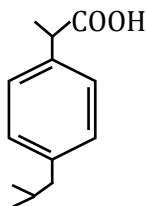
CIU066

SECTION-III

- This section contains a paragraph.
- Based on each paragraph, there are **TWO** questions.
- Each question has **FOUR** options (A), (B), (C) and (D) **ONLY ONE** of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories :
Full Marks : +3 If only the bubble corresponding to the correct answer is darkened.
Zero Marks : 0 In all other cases.

Paragraph for Q. 15 and 16

The analgesic drug ibuprofen (A) is chiral and exists in (+) and (–) forms. One enantiomer is physiologically active, while the other is inactive. The structure of ibuprofen is given below.



15. The principal functional group in structure (A) is :
 (A) Phenyl (B) –COOH group (C) Isopropyl (D) Both (A) and (B) CIU067
16. The IUPAC name of structure (A) is :
 (A) 3-(p-Isobutyl phenyl)propanoic acid (B) 3-(p-Isobutyl phenyl)propanoic acid
 (C) 3-(p-sec-Butyl phenyl)propanoic acid (D) 2-(p-sec-Butyl phenyl)propanoic acid CIU068

SECTION-IV

- This section contains **TWO** questions.
- **Each question has matching lists.** The codes for the lists have choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**
- For each question, marks will be awarded in one of the following categories :
Full Marks : +3 If only the bubble corresponding to the correct option is darkened.
Zero Marks : 0 If none of the bubbles is darkened.
Negative Marks : –1 In all other cases

17. Column - I (Common Name)	Column - II (Structural formula)
(A) Acetone	(P) $\text{CH}_2 = \text{CH} - \overset{\text{O}}{\parallel} \text{C} - \text{H}$
(B) Acetaldehyde	(Q) $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{CH}_3$
(C) Crotonaldehyde	(R) $\text{CH}_3 - \text{CH} = \text{CH} - \overset{\text{O}}{\parallel} \text{C} - \text{H}$
(D) Acrolein	(S) $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{H}$

(A) $A \rightarrow R, B \rightarrow S, C \rightarrow P, D \rightarrow Q$ (B) $A \rightarrow Q, B \rightarrow S, C \rightarrow P, D \rightarrow R$ (C) $A \rightarrow P, B \rightarrow S, C \rightarrow Q, D \rightarrow R$ (D) $A \rightarrow P, B \rightarrow Q, C \rightarrow R, D \rightarrow S$

CIU069

18. Column - I

(Common Name)

(A) Isooctane

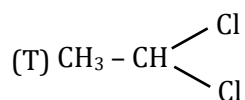
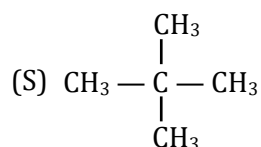
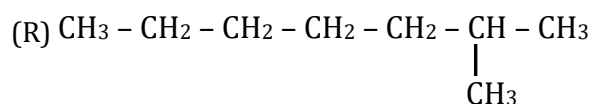
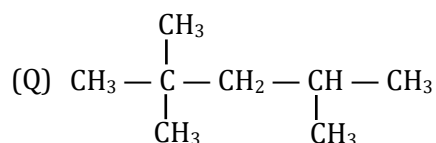
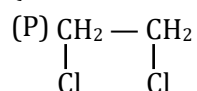
(B) Neopentane

(C) Ethylidene chloride (Geminal dihalide)

(D) Ethylene Dichloride (Vicinal dihalide)

Column - II

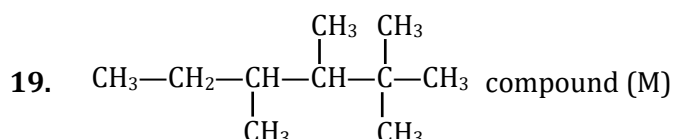
(Structural formula)

(A) $A \rightarrow P, B \rightarrow S, C \rightarrow T, D \rightarrow Q$ (B) $A \rightarrow S, B \rightarrow Q, C \rightarrow T, D \rightarrow P$ (C) $A \rightarrow P, B \rightarrow Q, C \rightarrow S, D \rightarrow T$ (D) $A \rightarrow Q, B \rightarrow S, C \rightarrow T, D \rightarrow P$

CIU070

SECTION-V

- This section contains **TWO** questions.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value (in decimal notation, truncated/rounded-off to the second decimal place; e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30, if answer is 11.36777..... then both 11.36 and 11.37 will be correct).
- Answer to each question will be evaluated according to the following marking scheme:
 Full Marks : +3, if ONLY the correct numerical value is entered as answer.
 Zero Marks : 0, in all other cases.



(a) No. of 1° carbon atoms in compound (M) is X

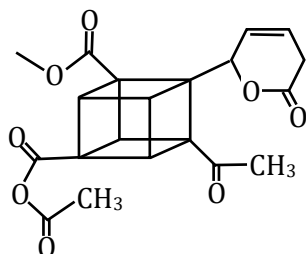
(b) No. of 2° carbon atoms in compound (M) is Y

(c) No. of 3° carbon atoms in compound (M) is Z

Write answer of part (a), (b) & (c) in the same order and present the three digit number XYZ as your answer in OMR sheet. for example : If all these answers are 9 (X = 9, Y = 9, Z = 9) then fill 999 in OMR sheet.

CIU071

20. The degree of unsaturation in compound is:



CIU072

ANSWER KEY

EXERCISE - O

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	C	B	C	C	B	C	C	A	C	C
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	C	A	B	C	D	C	A	D	A	B
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	B	D	D	B	C	B	B	A	A	A
Que.	31									
Ans.	C									

EXERCISE - S

1.	21	2.	11	3.	13	4.	13	5.	6
6.	5	7.	6	8.	4	9.	3	10.	4
11.	8	12.	4						

EXERCISE - JEE (Main) PYQ

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	4	1	1	4	4	2	3	4	4	4
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	1	4	9	3	1	3	5	4	3	10
Que.	21	22	23	24	25	26				
Ans.	3	4	0,1	3	1	2				

EXERCISE - JEE (Advanced) PYQ

Que.	1	2	3	4	5	6	7	8
Ans.	C	B	B	C	B	B	B,C	D

JEE (Main) Practice Paper

Section-A	Q.	1	2	3	4	5	6	7	8	9	10
	A.	1	1	2	4	1	3	1	1	2	1
	Q.	11	12	13	14	15	16	17	18	19	20
	A.	2	3	3	2	2	3	1	2	4	3
Section-B	Q.	1	2	3	4	5	6	7	8	9	10
	A.	114	19	15	6	16	8	17	5	19	22

JEE (Advanced) Practice Paper

Section-I	Q.	1	2	3	4	5	6	7	8	9	10
	A.	B	A	B	D	D	D	B	D	B	A
Section-II	Q.	11	12	13	14						
	A.	ABCD	ABC	ABC	ABCD						
Section-III	Q.	15	16								
	A.	B	D								
Section-IV	Q.	17	18								
	A.	B	D								
Section-V	Q.	19	20								
	A.	612	12								