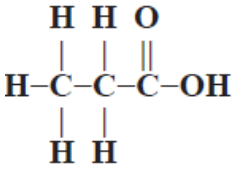
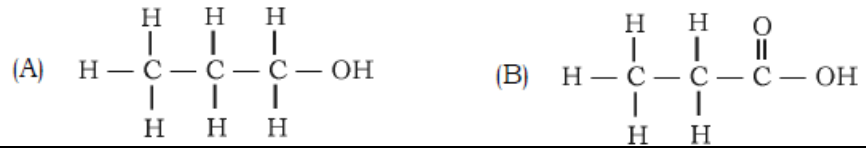
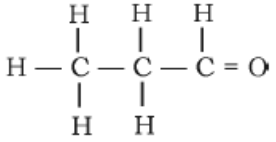
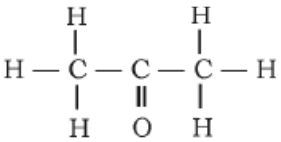
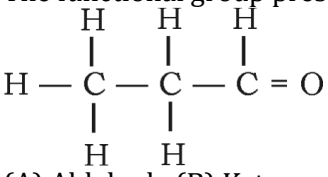
CHAPTER 04 – CARBON & ITS COMPOUNDS		
01.	What are saturated hydrocarbons and unsaturated hydrocarbons? Write the structure of the simplest hydrocarbon. **OR** Name the functional group in the following compounds and write their molecular formula. (i) Ethanol (ii) Ethanoic acid	MQP1 – 2
02.	(a) Explain substitution reaction with an example and chemical equation. (b) Explain the cleansing action of soap.	MQP1 – 4
03.	The functional groups present in propanol and propanal respectively are (A) — OH and — CHO (B) — OH and — COOH (C) — CHO and — COOH (D) — CHO and — CO	A2019 MCQ
04.	The electronic configuration of element X is 2, 8, 8, 1 and the electronic configuration of element Y is 2, 8, 7. Then the type of bond formed between these two elements is (A) covalent bond (B) hydrogen bond (C) metallic bond (D) ionic bond	A2019– MCQ
05.	What are structural isomers? Name the first member of alkanes that shows structural isomerism.	A2019–2
06.	(i) Write the differences between saturated and unsaturated hydrocarbons. (ii) Write the molecular formula and structural formula of an alkene having five carbon atoms. **OR** (i) Carbon atom does not form C 4 − anion and C 4 + cation. Why? (ii) How can ethanol be converted into ethanoic acid?	A2019–3
07.	What is a covalent bond?	J2019 – 1
08.	Name the first member of alkynes and write its molecular formula.	J2019 – 1
09.	Explain substitution reaction in hydrocarbons with an example. **OR** Explain the mechanism of cleaning action of soaps.	J2019 – 2
10.	The general formula of two specific groups of saturated and unsaturated hydrocarbons is CnH2n. Write the structures of the member of each group when n = 3.	J2019 – 2
11.	The group of compounds which are in homologous series is: A) CH_4, C_2H_4, C_2H_2 B) CH_4, CH_3OH, HCHO C) CH_4, C_2H_6, C_3H_8 D) C_2H_2, C_3H_6, C_4H_{10}	MQP2020– MCQ
12.	The molecular formula of three fatty acids A, B and C present in oil or fat is $C_{12}H_{29}COOH$, $C_{15}H_{29}COOH$ AND $C_{16}H_{29}COOH$. Which of these is derived from i) alkane ii) alkene iii) alkyne? Which of them becomes rancid earlier? How can we increase its shelf life?	MQP2020– 3
13.	If one hydrogen atom of propane is replaced by a ketone group, then the molecular formula of the compound obtained is A) C_4H_8O B) C_3H_8O C) $C_3H_6O_2$ D) $C_4H_{10}O$	MQP2020– MCQ
14.	What is esterification reaction?	MQP2020– 1
15.	An example for saturated hydrocarbon is: (A) C_2H_6 (B) C_3H_4 (C) C_2H_2 (D) C_2H_4	M2020 – MCQ
16.	The molecular formula of three carbon compounds which are in homologous series are C_2H_6 , C_3H_8 , C_4H_{10}. The suitable general formula for these compounds is (A) CnH2n (B) CnH2n−1 (C) CnH2n−2 (D) CnH2n+2.	M2020 – MCQ s
17.	Explain the cleansing action of soaps. **OR** Explain the method of converting ethanol into ethanoic acid with the help of chemical equation.	MQP2020– 2
18.	Explain the formation of covalent bond taking the example of methane and write the electron dot structure of methane.	MQP2020– 2

19.	Write the structural formula of butane and ethanoic acid.	MQP2020–2
20.	Explain the addition and substitution reaction with the help of examples. C_2H_6 undergoes substitution reaction but not addition reaction. Why? **OR** Explain how soap cleans clothes. More amount of soap is required to clean the clothes in hard water. Why?	M2020 – 3
21.	Identify the correct electron dot structure of nitrogen molecule in the following: (A) :N⋮⋮N: (B) :N⋮⋮N: (C) ·N⋮⋮N· (D) ·N⋮⋮N·	S2020 – MCQ
22.	The name and the molecular formula of the unsaturated hydrocarbon having general formula Cn H2n and containing 3 carbon atoms is: (A) propane, C_3H_8 (B) Cyclopropane, C_3H_6 (C) Propyne, C_3H_4 (D) Propene, C_3H_6	S2020 – MCQ
23.	Can detergent be used to test hardness of water? Give reason.	S2020 – 1
24.	a) What are structural isomers? Write two structures of butane molecule. b) How would you distinguish experimentally between an alcohol and a carboxylic acid?	S2020 – 4
25.	The correct group of saturated hydrocarbons is: A. CH4, C2H4, C3H4 B. C2H6, C3H8, C4H10 C. C2H2, C2H6, CH4 D. C2H2, C3H6, C4H6	MQP2021–MCQ
26.	The atomic number of an element 'X' is 11 and the atomic number of 'Y' is 17. Then the type of bond formed between these two elements A. hydrogen bond B. covalent bond C. ionic bond D. metallic bond	MQP2021–MCQ
27.	The functional group present in the carbon compound is:  A. aldehyde B. alcohol C. ketone D. carboxylic acid	MQP2021–MCQ
28.	The number of single bonds present in the structure of a cyclohexane molecule A. 12 B. 18 C. 24 D. 6	MQP2021–MCQ
29.	The molecular formula of benzene is A. C_5H_{12} B. C_6H_{12} C. C_6H_6 D. C_6H_{10}	MQP2021–MCQ
30.	The number of single bonds and double bonds present in a structure of benzene molecule respectively A. 6 and 6 B. 9 and 3 C. 7 and 5 D. 3 and 9	MQP2021–MCQ
31.	The common molecular formula for both cyclopropane and propene A. C_3H_6 B. C_3H_8 C. C_3H_4 D. C_2H_6	MQP2021–MCQ
32.	Carbon has the ability to form bonds with other atoms of carbon giving rise to large molecules. This unique property of carbon is A. saponification B. catenation C. hydrogenation D. esterification	MQP2021–MCQ
33.	The group of compounds which are in homologous series A. CH_4, C_2H_6, C_3H_8 B. CH_4, C_2H_4, C_2H_2 C. CH_4, CH_3-OH, H-CHO D. C_2H_2, C_3H_6, C_4H_{10}	MQP2021–MCQ
34.	The structural formula of propanal is:  (A) (B)	J2021–1

	(C)  (D) 	
35.	The number of single bonds and double bonds present in a structure of benzene molecule respectively (A) 3 and 9 (B) 9 and 3 (C) 6 and 6 (D) 7 and 5	J2021–1
36.	The common molecular formula of both hexene and cyclohexane is (A) C_6H_6 (B) C_6H_{14} (C) C_6H_{12} (D) C_6H_{10}	J2021–1
37.	The major component of bio-gas is (A) propane (B) butane (C) methane (D) ethane	S2021–1
38.	The pair of carbon compounds having same molecular formula is (A) Hexane, Hexene (B) Hexene, Hexyne (C) Hexene, Benzene (D) Hexene, Cyclohexane	S2021–1
39.	The functional group present in this carbon compound is  (A) Aldehyde (B) Ketone (C) Carboxylic acid (D) Alcohol	S2021–1
40.	A group of carbon compounds that are in homologous series (A) CH_4, C_2H_4, C_3H_4 (B) C_2H_2, C_2H_6, C_3H_6 (C) C_2H_4, C_3H_6, C_4H_8 (D) C_3H_6, C_3H_8, C_3H_4	S2021–1
41.	The saturated hydrocarbon among the following is (A) C_5H_8 (B) C_2H_2 (C) C_6H_6 (D) C_5H_{12}	S2021–1
42.	a) Write any two differences between saturated and unsaturated carbon compounds. b) Write the molecular formula and structural formula for the following carbon compounds. i) propanoic acid ii) cyclohexane ii) pentane	MQP2022–5
43.	Write the structural formula of ethene molecule.	A2022–1
44.	a) What are structural isomers ? Write the molecular and structural formula of butane. b) What is catenation ? Write general formula for alkenes.	A2022–4
45.	Mention the number of single bonds and double bonds present in the structure of C_2H_5COOH molecule.	MQP–2023–MCQ
46.	Write the electron dot structure of methane.	MQP–2023–1
47.	a) The conversion of ethanol to ethanoic acid is an oxidation reaction. Why? b) What are structural isomers? Write the structural isomers of butane.	MQP–2023–4
48.	The general formula of cycloalkanes is CnH2n and its first member is cyclopropane (C3H6). Write the molecular formula and structural arrangement of the fourth member of this homologous series.	A2023–4
49.	What is hydrogenation ?	A2023–1
50.	a) How will ethanol be oxidised ? b) Explain the cleaning action of soaps.	A2023–4
51.	Why are detergents more suitable for cleansing clothes in hard water ?	J2023–1
52.	In a homologous series, the first member of hydrocarbon group has the molecular formula CH4. Then find out the molecular formula of the fourth member and write two types of structural formula of it.	J2023–2
53.	a) Identify unsaturated hydrocarbons in the following carbon compounds and write their structural formula. C_6H_6, C_5H_{12}, C_2H_5OH, C_2H_2.	J2023–3

	b) Write the difference between esterification and saponification. **OR** a) Write electron dot structure of oxygen molecule. b) Carbon atom does not form C^{4-} anion and C^{4+} cation. Why ?	