

SAMAGRA SHIKSHA KERALA

SUMMATIVE ASSESSMENT - I (2026–27)

CHEMISTRY — CLASS X (ANSWER KEY)

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Question Code: E1006–Ch

Time: 1 ½ Hours

Total Score: 40

Qn. No.	Value Points / Expected Answer	Split Score	Total Score
1	C. CH≡CH (Ethyne)	1	1
2	D. (a)-(ii), (b)-(iv), (c)-(iii) (Ethanol → Hydroxyl; Pentanal → Aldehyde; Ethoxypropane → Alkoxy)	1	1
3	c) ii & iv are correct (For 3s: l = 0, and number of m values = 1)	1	1
4	C) A is correct but R is not correct. (Alkenes are unsaturated hydrocarbons)	1	1
5	a) 5 Carbon atoms b) 3-Methylpentane	1 1	2
6	(A) a) 3d b) Number of 'm' values = 5 (m = 2l + 1 = 2 × 2 + 1 = 5)	1 1	2
	--- OR ---		
	(B) a) Heisenberg's Uncertainty Principle b) Quantum mechanical model	1 1	
7	a) Carbon dioxide (CO ₂) and Water (H ₂ O) b) CH ₄ + 2O ₂ → CO ₂ + 2H ₂ O	1 1	2
8	(A) a) Polymerisation (or Addition polymerisation) b) Polythene (Polyethylene)	1 1	2
	--- OR ---		
	(B) a) Phenol, Formaldehyde b) Adipic acid, Hexamethylenediamine	1 1	
9	a) By reacting methanol with carbon monoxide in the presence of a catalyst: CH ₃ OH + CO → CH ₃ COOH b) (Any one): - Manufacture of vinegar - Production of acetic anhydride, acetate esters, rayon/synthetic fibres - Solvent for polymers and resins - Manufacture of medicines and disinfectants	1 1	2
10	a) Structure: CH ₃ —CH(Br)—CH ₂ —CH ₃ b) 2-Bromobutane	1 1	2
11	a) Chloromethane (CH ₃ Cl) b) CH ₄ + Cl ₂ --> CH ₃ Cl + HCl	1 1	2
12	a) Enzyme A: Invertase, Enzyme B: Zymase b) Ethanol (CH ₃ CH ₂ OH / Ethyl alcohol) c) Power alcohol is a mixture of 20% absolute alcohol and 80% petrol.	½ + ½ 1 1	3
13	(A) a) Carboxylic group / Carboxyl group (-COOH) b) Carboxylic acids c) Yes. Both compounds have the same molecular formula (C ₄ H ₈ O ₂) but contain different functional groups (Carboxylic acid & Ester).	1 1 1	3
	--- OR ---		
	(B) a) Benzene b) Hexagonal closed ring with alternating double bonds (or planar hexagonal ring with central circle, C ₆ H ₆) c) Phenol (C ₆ H ₅ OH / Benzene ring with -OH group)	1 1 1	
14	i) But-2-ene ii) Ethyl propanoate iii) 2,2,3-Trichloropentane	1 1 1	3
15	a) X = C ₄ H ₈ (Butene) b) Alkene c) C ₄ H ₁₀ (Butane)	1 1 1	3
16	(A) a) C ₂ H ₂ (Ethyne) b) (i) Addition reaction (ii) Thermal cracking	1 1 + 1	3
	--- OR ---		
	(B) a) Substitution reaction b) Addition reaction c) Thermal cracking	1 1 1	
17	a) Carboxylic acid and Alcohol b) Butanoic acid and Ethanol (Ethyl alcohol) c) Pineapple smell / flavour	1 1 1	3
18	(A) a) Structure: CH ₃ —O—CH ₂ —CH ₂ —CH ₃ b) IUPAC Name: 1-Methoxypropane (Methoxypropane) c) Metamer structure: CH ₃ —CH ₂ —O—CH ₂ —CH ₃ IUPAC Name: Ethoxyethane	1 1 1 1	4
	--- OR ---		
	(B) a) Ketone: 7. CH ₃ —CO—CH ₂ —CH ₃ (Butan-2-one) b) Functional isomer: 2. CH ₃ —CH ₂ —CH ₂ —CHO (Butanal) c) Chain isomers: 4 & 6 (CH ₃ —CH ₂ —CH ₂ —CH ₃ and CH ₃ —CH(CH ₃)—CH ₃) d) Position isomerism	1 1 1 1	