Unit 11: Carboxylic Compounds

27 MCQs. Correct option in bold. 1 mark each.

1. Carboxylic acids contain the functional group
A. –OH B. $–NH_2$ C. –CHO **D. –COOH**

2. The common name of methanoic acid is
A. formic acid B. butyric acid
C. acetic acid D. propionic acid

3. The common name of ethanoic acid is
A. citric acid **B. acetic acid**
C. formic acid D. propionic acid

4. Ethanoic acid can be formed from ethanol by oxidation using
A. sodium chloride
B. dilute HCl
C. acidified potassium permanganate(VII) or potassium dichromate
D. water

5. In the oxidation of ethanol to ethanoic acid, the role of potassium manganate(VII) is that of an
A. reducing agent **B. oxidising agent**
C. catalyst D. inhibitor

6. In the first step of oxidation of ethanol, ethanol is converted to
A. ethanal B. ethene
C. ethane D. ethyl ethanoate

7. Ethanal is further oxidised to
A. ethane B. ethanol
C. ethene **D. ethanoic acid**

8. The equation $C_2H_5OH + 2[O] \rightarrow CH_3COOH + H_2O$ represents
A. reduction of ethanoic acid B. fermentation
C. oxidation of ethanol to ethanoic acid D. esterification

9. Vinegar is produced from ethanol by the action of micro-organisms called
A. acetobacter B. virus
C. algae D. yeast

10. Bacterial oxidation of ethanol to vinegar needs
A. high temperature of 300 °C **B. an aerobic environment (oxygen)**
C. no oxygen D. very high pressure

11. Typical vinegar contains about
A. 100 % acetic acid B. 40–80 % acetic acid
C. 4–8 % acetic acid D. 0.4 % acetic acid

12. The main component of vinegar is
A. propanoic acid B. methanol
C. ethanol **D. ethanoic acid**

13. Carboxylic acids are _____ than mineral acids.
A. neutral **B. weaker acids**
C. equally strong D. stronger acids

14. Ethanoic acid reacts with sodium hydroxide to form
A. sodium bicarbonate B. sodium chloride
C. sodium oxide **D. sodium ethanoate**

15. Ethanoic acid reacts with sodium carbonate to form
A. sodium ethanoate, water and carbon dioxide
B. sodium propanoate
C. sodium chloride
D. sodium hydroxide

16. What gas is produced when a carboxylic acid reacts with a carbonate?
A. Nitrogen B. Hydrogen
C. Carbon dioxide D. Oxygen

17. The gas released when a carboxylic acid reacts with an active metal is
A. hydrogen B. oxygen
C. nitrogen D. carbon dioxide

18. The carboxylic acid reacts with an alcohol in the presence of an acid catalyst to form an
A. alkene **B. ester** C. aldehyde D. ketone

19. The catalyst used in esterification is
A. sodium hydroxide B. hydrochloric acid
C. concentrated sulphuric acid D. potassium manganate(VII)

20. A reaction in which two molecules combine with the elimination of a small molecule like water is called a
A. combustion B. addition reaction
C. neutralisation **D. condensation reaction**

21. The ester formed from methanol and ethanoic acid is
A. methyl methanoate **B. methyl ethanoate**
C. ethyl ethanoate D. ethyl methanoate

22. Sodium salts of fatty acids are used in making
A. soaps and detergents B. fuels
C. metals D. cement

23. Citric acid is used as a natural
A. fuel B. poison
C. preservative D. dye

24. Esters are used as industrial solvents for
A. fertilisers
B. metals
C. fuels
D. dyes, glues, inks and nail polish remover

25. The ester isopentyl acetate has the flavour of
A. orange **B. banana** C. apple D. pineapple

26. Aspirin is an example of an
A. alkane B. alkene C. alcohol **D. ester**

27. Ethanoic acid solution (5 %) is used as
A. vinegar B. polish C. soap D. petrol