Unit 10: Hydroxy Compounds

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

1. The chemical formula of ethanol is
A. C_2H_6 B. CH_3OH C. C_3H_7OH **D. C_2H_5OH**

2. The chemical formula of methanol is
A. CH_3OH B. CH_4 C. C_3H_7OH D. C_2H_5OH

3. Ethanol can be manufactured by
A. electrolysis and filtration
B. cracking and distillation
C. fermentation of glucose and hydration of ethene
D. neutralisation only

4. Which organism is used in the fermentation process to produce ethanol?
A. Mould **B. Yeast** C. Algae D. Bacteria

5. The optimum temperature range for fermentation of glucose is
A. 25–35 °C B. 50–60 °C C. 70–80 °C D. 0–10 °C

6. The equation for fermentation of glucose is
A. $C_2H_4 + H_2O \rightarrow C_2H_5OH$ B. $C_6H_{12}O_6 \rightarrow 6CO_2 + 6H_2O$
C. $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$ D. $C_2H_5OH \rightarrow C_2H_4 + H_2O$

7. The primary by-product of ethanol fermentation is
A. methane **B. carbon dioxide**
C. water only D. oxygen

8. Fractional distillation of the fermentation mixture gives
A. 50 % ethanol B. 100 % ethanol
C. 10 % ethanol **D. 96 % ethanol (rectified spirit)**

9. 96 % pure ethanol is called
A. methylated gas B. gasohol
C. rectified spirit D. absolute petrol

10. Rectified spirit is converted into 100 % ethanol using a dehydrating agent such as
A. water B. sodium chloride
C. dilute HCl **D. concentrated H_2SO_4**

11. Ethanol is also made industrially by the catalytic addition of steam to
A. ethene B. methane C. ethyne D. ethane

12. In the hydration of ethene, the temperature is about
A. 30 °C **B. 300 °C** C. 3000 °C D. 100 °C

13. In the hydration of ethene, the pressure is about
A. 200 atm B. 0.1 atm
C. 6 atm (6000 kPa) D. 1 atm

14. The catalyst used in the catalytic hydration of ethene is
A. nitric acid B. sulphuric acid
C. hydrochloric acid **D. phosphoric acid**

15. In the hydration of ethene, only about _____ of ethene is converted into ethanol per pass.
A. 4 % B. 100 % C. 40 % D. 96 %

16. A disadvantage of the hydration method is that it
A. is slow
B. uses non-renewable ethene and high energy
C. produces impure ethanol
D. uses moderate temperature

17. A disadvantage of fermentation is that it is
A. a slow batch process producing impure ethanol
B. a fast continuous process
C. a non-renewable process
D. a high pressure process

18. An advantage of fermentation is that it
A. is continuous B. gives pure ethanol quickly
C. uses crude oil **D. uses renewable resources and low energy**

19. The combustion of ethanol is represented by
A. $C_2H_4 + H_2O \rightarrow C_2H_5OH$ B. $CH_3OH + O_2 \rightarrow CH_4 + H_2O$
C. $C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O$ + heat D. $C_2H_5OH \rightarrow C_2H_4 + H_2O$

20. Methanol as a car fuel has
A. no energy **B. a lower energy content than gasoline**
C. a higher energy content than gasoline D. the same as diesel

21. Petrol blended with 10–20 % ethanol is called
A. gasohol B. kerosene C. naphtha D. bitumen

22. Ethanol is a better fuel in terms of the environment because it is
A. radioactive B. non-renewable
C. renewable and cleaner burning D. very costly

23. Which fuel is commonly blended with petrol to reduce emissions?
A. Kerosene **B. Ethanol** C. Diesel D. Coal gas

24. One advantage of alcohol fuels over fossil fuels is that they
A. are non-flammable B. have higher sulphur content
C. produce more smoke **D. are renewable**

25. A disadvantage of alcohol fuels compared to petrol is
A. higher pollution B. higher sulphur content
C. lower energy content D. more smoke

26. Vinegar is produced by the bacterial oxidation of
A. propanol **B. ethanol**
C. methanol D. ethanoic acid

27. Bacterial oxidation of ethanol to ethanoic acid needs
A. a strong acid B. high pressure
C. absence of oxygen **D. the presence of oxygen**