

SCIENCE QUIZ OCT 2020

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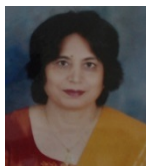
Direction Q1 to Q5: in the following questions, the assertion and reason have been put forward. Read the statements carefully and choose the correct alternative from the following:

- (A) Both the assertion and the reason are correct and the reason is the correct explanation of the assertion.
- (B) The assertion and the reason are correct but the reason is not the correct explanation of the assertion.
- (C) Assertion is true but the reason is false.
- (D) The statement of the assertion is false but the reason is true.

1. Assertion: methane is simplest saturated hydrocarbon which is a major component of natural gas.
Reason: methane belongs to alkenes.
2. Assertion: ethanol is present in alcoholic drinks.
Reason: ethanol has formula CH_3OH .
3. Assertion: ethanoic acid reacts with ethyl alcohol in the presence of concentrated H_2SO_4 to form ethyl ethanoate.
Reason: esters are used in ice creams and cold drinks.
4. Assertion: vegetable oils are unsaturated; react with hydrogen in presence of nickel to form vegetable ghee.
Reason: this reaction is saponification.
5. Assertion: soaps are 100% biodegradable but do not work well with hard water.
Reason: some detergents are not biodegradable but work well with hard water.
6. 100% pure ethyl alcohol is called -----
(A) absolute alcohol (B) methyl alcohol (C) carboxylic acid (D) none of these.
7. Carboxylic acid containing one carbon atom is called -----
(A) acetic acid (B) formic acid (C) propanoic acid (D) benzoic acid
8. ----- is a versatile element that forms the basis for all living organisms and many of the things we use.
(A) hydrogen (B) carbon (C) oxygen (D) silicon
9. Covalent bonds are formed by the ----- of electrons between two atoms so that both can achieve a completely filled outermost shell.
(A) donating (B) sharing (C) transfer (D) none of these
10. The unsaturated hydrocarbons which contain one or more double bonds are called -----
(A) alkynes (B) alkenes (C) alkane (D) acid
11. A group of organic compounds having similar structure and similar chemical properties in which the successive compounds differ by $-\text{CH}_2$ group is called a -----
(A) homologous series (B) functional group (C) unsaturated compound (D) saturated hydrocarbon

12. Which of the following does not belong to the same homologous series?
 (A) CH₄ (B) C₂H₆ (C) C₃H₈ (D) C₄H₈
13. Carbon forms four covalent bonds by sharing its four valence electrons with four univalent atoms, e.g. hydrogen. After the formation of four bonds, carbon attains the electronic configuration of -----
 (A) helium (B) neon (C) argon (D) krypton
14. Vinegar is a solution of -----
 (A) 50% to 60% acetic acid in alcohol (B) 5% to 8% acetic acid in alcohol
 (C) 5% to 8% acetic acid in water (D) 50% to 60% acetic acid in H₂O
15. Buckminster fullerene is an allotropic form of -----
 (A) phosphorus (B) sulphur (C) carbon (D) tin
16. A molecule of ammonia (NH₃) has -----
 (A) only single bonds (B) only double bonds
 (C) only triple bonds (D) two double bonds one single bond
17. Which of the following is the formula of ethanol -----
 (A) CH₃CHO (B) CH₃COOH (C) CH₃CH₂OH (D) CH₃COOCH₃
18. Artificial flavours for orange is obtained from -----
 (A) amyl acetate (B) isoamyl valerate (C) methyl butyrate (D) octyl acetate
19. A functional group mainly determines the -----
 (A) physical properties (B) chemical properties (C) both (A) and (B) (D) none of these
20. -CHO represents the functional group of -----
 (A) esters (B) carboxylic acid (C) alcohols (D) aldehydes
21. Why does carbon form compounds mainly by covalent bonding?
 (A) there are four electrons in the outermost shell of carbon
 (B) it requires large amount of energy to form C⁺⁴ or C⁻⁴ ion
 (C) it shares its valence electrons to complete its octet.
 (D) all the above
22. Which of the following statements are correct for carbon compounds?
 (a) *most carbon compounds are good conductors of electricity*
 (b) *most carbon compounds are poor of conductors of electricity*
 (c) *force of attraction between molecules of carbon compounds is not very strong*
 (d) *force attraction between molecules of carbon compounds is very strong.*
 (A) b & d (B) b & c (C) a & d (D) a & c
23. Which of the following is the formula of butanoic acid?
 (A) CH₃CH₂CH₂CH₂COOH (B) CH₃COOH
 (C) CH₃CH₂COOH (D) CH₃CH₂CH₂COOH

24. Which of the following belongs to homologous series of alkynes?
(A) C_6H_6 (B) C_2H_4 (C) C_2H_6 (D) C_3H_4
25. Ethane, with the molecular formula C_2H_6 has-----
(A) 6 covalent bonds (B) 7 covalent bonds (C) 8 covalent bonds (D) 9 covalent bonds
26. Butanone is a four carbon compound with the functional group of -----
(A) carboxylic acid (B) aldehyde (C) ketone (D) alcohol
27. While cooking, if the bottom of the vessel is getting blackened on the outside, it means that ----
(A) the food is not cooked completely
(B) the fuel is not burning completely
(C) the fuel is wet
(D) the fuel is burning completely
28. Which of the following hydrocarbon undergoes addition reaction?
(A) C_2H_6 (B) C_3H_8 (C) C_2H_2 (D) CH_4
29. How many structural isomers can you draw for pentane?
(A) 2 structural isomers (B) 3 structural isomers
(C) 4 structural isomers (D) 5 structural isomers
30. The hetero atoms present in $CH_3-CH_2-O-CH_2-CH_2-Cl$ are -----
(a) oxygen (b) carbon (c) hydrogen (d) chlorine
(A) a & b (B) b & c (C) c & d (D) a & d
31. In which of the following compounds $-OH$ is the functional group?
(A) butanone (B) butanol (C) butanoic (D) butanal
32. Which among the following are unsaturated hydrocarbons?
(A) $H_3C-CH_2-CH_2-CH_3$ (B) $CH_3-C\equiv C-CH_3$
(C) CH_3-CH_3 (D) $CH_3-CH_2-CH_3$
33. Which of the following does not belong to the same homologous series?
(A) CH_4 (B) C_2H_6 (C) C_3H_8 (D) C_4H_8
34. In the soap micelles -----
(A) the ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster
(B) ionic end of soap is in interior of the cluster and the carbon chain is out of the cluster
(C) both ionic end and carbon chain are in the interior of the cluster
(D) both ionic end and carbon chain are on the exterior of the cluster
35. Mineral acid are stronger acids than carboxylic acid because -----
(A) mineral acids are completely ionized
(B) carboxylic acids are completely ionized
(C) mineral acids are partially ionized
(D) carboxylic acids are not ionized



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ANSWERS to the Quiz
1. (C) 2. (C) 3. (B) 4. (C) 5. (B) 6. (A) 7. (B) 8. (B) 9. (B) 10. (B)
11. (A) 12. (D) 13. (B) 14. (C) 15. (C) 16. (A) 17. (C) 18. (D) 19. (B) 20. (D)
21. (D) 22. (B) 23. (D) 24. (D) 25. (B) 26. (C) 27. (B) 28. (C) 29. (B) 30. (D)
31. (B) 32. (B) 33. (D) 34. (A) 35. (A)

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