

CHEMISTRY

16. The most inferior and the most superior quality of coal are
A) Peat and Lignite
B) Anthracite and Bituminous
C) Peat and Bituminous
D) Peat and Anthracite
17. Bitumen is used in
A) electric generators
B) road surfacing
C) coal tar
D) natural gas
18. Which of the following is not a fossil fuel?
A) Oil
B) Geothermal
C) Natural gas
D) Coal
19. Naphthalene balls are obtained from
A) Carbon
B) Coke
C) Coal tar
D) Coal gas
20. Approximate composition of gasoline?
A) $C_9 - C_{11}$
B) $C_7 - C_9$
C) $C_{11} - C_{16}$
D) $C_{11} - C_{14}$
21. Which is used as a solvent for dry cleaning
A) Petrol
B) Petroleum ether
C) Asphalt
D) Petroleum coke
22. Hydrogen gas obtained from natural gas is used in
A) Motor fuel
B) Fertilizers
C) Paints
D) Stoves
23. Which of them is used in extraction of metals?
A) Coke
B) Coal gas
C) Coal tar
D) Petroleum
24. Which of the following has lower ignition temperature?
A) Wood
B) Paper
C) Vegetable oil
D) Keroscene oil
25. Coal is in nature.
A) soft
B) hard
C) thin
D) hot
26. Which gas is obtained during the processing of coal?
A) Carbon dioxide
B) Coal gas
C) Carbon monoxide
D) Sulphur dioxide
27. Match the following.
i) Residual oil a) better fuel than coal
ii) Paraffin wax b) obtained by primary distillation
iii) Lubricating oil c) boiling range is 623K to 673K
iv) Fuel oil d) obtained by fractionation of residual oil
A) i - b; ii - c; iii - d; iv - a
B) i - b; ii - d; iii - c; iv - a
C) i - c; ii - b; iii - d; iv - a
D) i - c; ii - d; iii - b; iv - a
28. The molecular formulae of ethyl mercaptan is
A) C_2H_6SH
B) C_2H_5SH
C) C_2H_3SH
D) CH_5SH
29. $CH_4 + H_2O \xrightarrow[N_1]{900^\circ C} X + Y$; where x, y are
A) $CO_2 + H_2$
B) $CO + H_2O$
C) $CO + H_2$
D) $C + H_2$
30. Which of the following is not the product of destructive distillation of coal?
A) Coke
B) Coal gas
C) Ammonial liquor
D) Producer gas

BIOLOGY

31. The structural and functional unit of all organisms are called :
A) DNA
B) Cell
C) Tissue
D) Embryo
32. Who did discover a living cell firstly :
A) Robert Hooke
B) Antony von Leeuwenhoek
C) Theodor Schwann
D) M.J. Schleiden

33. Cell theory was proposed by :
 A) Theodar Schwann and Rudolph Virchow B) M.J. Schleiden and Rudolph Vrichow
 C) Theodar Schwann and M. J. Schleiden D) Purkinje and Theodar Schwann
34. The book "Micrographia" written by :
 A) Robert Hooke B) Antony van Leeuwenhoek
 C) M. J. Schleiden D) Theodar Schwann
35. The smallest knowing cell is :
 A) Bacteria B) Virus C) Micoplasma D) Nerve cell
36. The essential part of a cell are :
 A) Plasma membrane and cytoplasm
 B) Cytoplasm, plasma membrane and cell wall
 C) Mitochondria, Golgibodies, vacuoles and Nucleus
 D) Plasma membrane, cytoplasm and Nucleus
37. The fluid mosaic model of plasma membrane proposed by :
 A) Singer & Nicolson B) Robertson and Grendel
 C) Nageli and Nicolson D) Danielli and Davson
38. The cytoplasmic connection between adjacent cell is :
 A) Plasmamembrane B) Plasmalemma C) Plasmodesmata D) Plasma protein
39. The cementing layer in between adjacent cell is :
 A) Primary wall B) Middle lamella C) Secondary wall D) Lipid bilayer
40. Protoplasm is :
 A) Plasma membrane and nucleus only
 B) Plasma membrane and cytoplasm only
 C) Cytoplasm and nucleus and plasma membrane
 D) Cytoplasm except ribosomes
41. Ribosomes are attached to the surface of :
 A) Rough endoplasmic reticulum B) Smooth endoplasmic reticulum
 C) Both rough and smooth endoplasmic reticulum D) Mitochondria
42. Protein synthesis occurs in :
 A) smooth endoplasmic reticulum B) Rough endoplasmic reticulum
 C) Lysosome D) Golgi apparatus
43. Golgi apparatus were discovered by :
 A) Camillo Golgi B) Christian de Duve C) Kolliker D) George Palade
44. Lysosome was discovered by :
 A) Calmillo Golgi B) Christian de Duve C) Kolliker D) George Palade
45. Which one is popularly known as "Palade Particles"?
 A) Golgi bodies B) Ribosomes C) Lysosome D) Nucleus

MATHEMATICS

46. The degree of the polynomial $\frac{3x^3 - 7x^2 + 5x^4 - 8x^6}{2x^2}$ is
 A) 2 B) 3 C) 4 D) 6
47. The remainder obtained when $x^6 + 3x^2 + 10$ is divided by $x^3 + 1$ is
 A) $x^2 - 11$ B) $3x^2 + 11$ C) $x^3 - 1$ D) $1 - x^3$

48. If $x + \frac{1}{x} = 6$, then the value of $x^2 + \frac{1}{x^2}$ is
 A) 34 B) 36 C) 6 D) 12
49. The value of $\frac{88 \times 88 - 78 \times 78}{10}$ is
 A) 166 B) 100 C) 150 D) 176
50. The value of $(67)^2 + (17)^2 - 2 \times 67 \times 17$
 A) 1000 B) 1500 C) 2000 D) 2500
51. The value of $(a + 3)^2 - (a - 3)^2$ is
 A) $2a^2 - 9$ B) $12a$ C) $a^2 - 9$ D) None
52. The product of $\left(\frac{2}{5}x^2 + 2\right)\left(\frac{2}{5}x^2 - 2\right)$ is
 A) $\frac{2}{5}x^4 - 4$ B) $\frac{4}{25}x^4 - 4$ C) $\frac{4}{25}x^4 - 2$ D) $\frac{4}{25}x^4 - 4$
53. If $x + y = 20$ and $xy = 80$, then the value of $x^2 + y^2$ is
 A) 240 B) 400 C) 640 D) 100
54. If $(ax^3 + 2)^2 = a^2x^6 + x^3 + 4$ then the value of 'a' is
 A) 4 B) $\frac{1}{4}$ C) $\frac{1}{2}$ D) 2
55. Find the value of $0.545 \times 0.545 + 2 \times 0.545 \times 0.455 + 0.455 \times 0.455$ is
 A) 3 B) 2 C) 1 D) 0
56. Which of the following is a trinomial
 A) $2x^2 + 3x + x$ B) $5x^4 + 6x^2 - 2x^2$ C) $7xy$ D) $2x^2 + 3x + 4$
57. The value of $\frac{1}{6^{-2}}$ is
 A) $\frac{1}{36}$ B) 12 C) 36 D) None
58. If $7^{2x+4} = (49)^{2x-1}$ then the value of x is
 A) 3 B) 4 C) 8 D) 2
59. If $\left(\frac{a}{b}\right)^{x-1} = \left(\frac{b}{a}\right)^{x-3}$ then x is equal to
 A) 1 B) $\frac{1}{2}$ C) $\frac{7}{2}$ D) 2
60. The value of $\left[(-3)^{-3}\right]^{-2}$ is
 A) 81 B) 729 C) can't determined D) none

PHYSICS

1. A
2. D
3. C
4. D
5. C
6. D
7. D
8. B
9. C
10. C
11. B
12. B
13. C
14. C
15. C

CHEMISTRY

16. D
17. B
18. B
19. C
20. B
21. B
22. B
23. A
24. D
25. B
26. B
27. B
28. B
29. C
30. D

BIOLOGY

31. B
32. B
33. C
34. A
35. C
36. D
37. A
38. C
39. B
40. C
41. A
42. B
43. A
44. B
45. B

MATHEMATICS

46. C
47. B
48. A
49. A
50. D
51. B
52. D
53. A
54. B
55. C
56. D
57. C
58. A
59. D
60. B