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Concept Test

Sample Paper

CLASS

VIII

Section – A (Science)

1. A brick is kept in three different ways on a table as shown in figure. The pressure exerted by the brick on the table will be:

   A   **B**   **C**
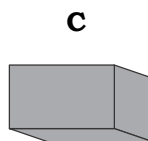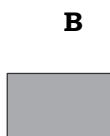
   (a) maximum in position A
   (b) maximum in position B
   (c) maximum in position C
   (d) equal in all cases

2. Whenever the surfaces in contact tend to move or move with respect to each other, the force of friction comes into play:
   (a) only if the objects are solid.
   (b) only if one of the two objects is liquid.
   (c) only if one of the two objects is gaseous.
   (d) irrespective of whether the objects are solid, liquid or gaseous.

3. An object is vibrating at 50 hertz. What is its time period?
   (a) 0.02 s   (b) 2 s   (c) 0.2 s   (d) 20.0 s

4. 1 hertz is equal to:
   (a) 1 vibration per minute
   (b) 10 vibrations per minute
   (c) 60 vibrations per minute
   (d) 600 vibrations per minute

5. Which of the following solutions will not make the bulb in figure glow?
   (a) sodium chlorides
   (b) copper sulphate
   (c) silver nitrate
   (d) sugar solution in diluted water

   Solution
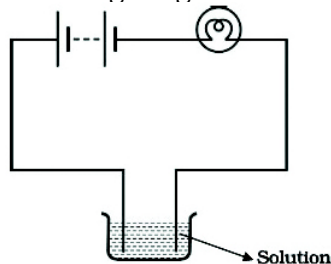
6. The earth's plate responsible for causing earthquakes is:

(a) the crust of the earth

(b) the mantle of the earth

(c) the inner core of the earth

(d) the outer core of the earth

7. Consider the list of terms given below:

(i) Seismic Zone (ii) Fault Zone (iii) Mantle (iv) Inner Core

The boundaries of the earth's plate are known as:

(a) (i) and (ii) (b) (i) and (iii) (c) (iii) and (iv) (d) (ii), (iii) and (iv)

8. Consider the list of terms given below:

(i) Tsunami (ii) Landslide (iii) Floods (iv) Lightning

Earthquakes can cause:

(a) (i), (ii) and (iii) (b) (ii) and (iv) (c) (ii), (iii) and (iv) (d) (iii) and (iv)

**9.** Light is falling on surface S_1, S_2, S_3 as shown in figure:

Surface S₁   Surface S₂   Surface S₃
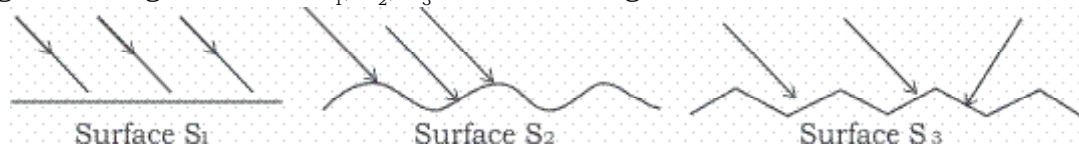
Surfaces on which the angle of incidence is equal to the angle of reflection is/are:

(a) S_1 only

(b) S_1 and S_2 only

(c) S_2 and S_3 only

(d) All the three surfaces

10. Two mirrors A and B are placed at right angles to each other as shown in figure:
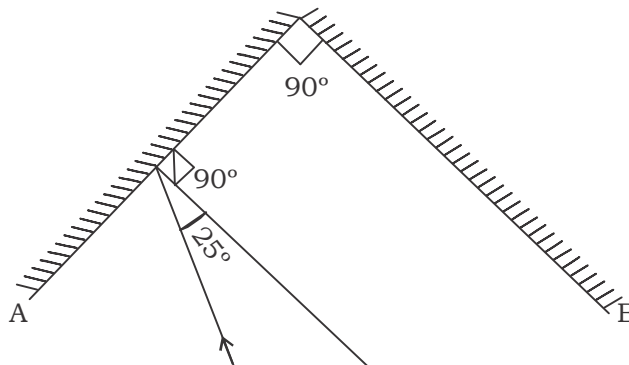
A ray of light incident on mirror A at an angle of 25° falls on mirror B after reflection. The angle of reflection for the ray reflected from mirror B would be:

(a) 25° (b) 50° (c) 65° (d) 115°

11. Suppose a new planet is discovered between Uranus and Neptune. Its time period would be:

(a) less than that of Neptune.

(b) more than that of Neptune.

(c) equal to that of Neptune or Uranus.

(d) less than that of Uranus.

12. The change in seasons on the earth occurs because:

(a) the distance between the earth and the sun is not constant.

(b) the axis of rotation of the earth is parallel to the plane of its orbit.

(c) the axis of rotation of the earth is perpendicular to the plane of its orbit.

(d) the axis of rotation of the earth is tilted with respect to the plane of its orbit.

13. The first of a month is the new moon day. On fifteenth of the same month, which of the following figures would represent the phase of the moon?

(a)   (b)   (c)   (d)
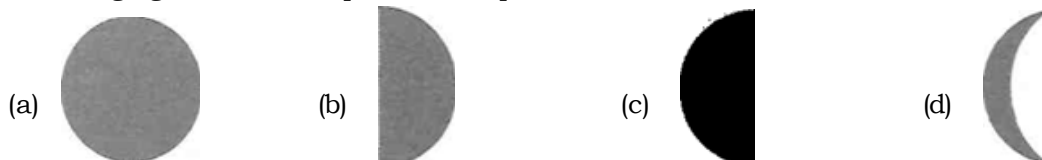
14. Incomplete combustion of fuel such as petrol and diesel gives:

(a) nitrogen oxide   (b) sulphur dioxide   (c) carbon monoxide   (d) carbon dioxide

15. Which of the following procedures will give you water free from all impurities?

(a) adding chlorine tablets   (b) distillation

(c) boiling   (d) filtration

16. Which is a thermosetting plastic?

(a) Melamine   (b) Polythene   (c) PVC   (d) Nylon

17. Which of the following is not a common property of plastics?

(a) Non-reactive   (b) Light in weight

(c) Durable   (d) Good conductor of electricity

18. Which of the following groups contain all synthetic substances?

(a) Nylon, Terylene, Wool   (b) Cotton, Polycot, Rayon

(c) PVC, Polythene, Bakelite   (d) Acrylic, Silk, Wool

19. Metals generally react with dilute acids to produce hydrogen gas. Which one of the following metals does not react with dilute hydrochloric acid?

(a) magnesium   (b) aluminium   (c) iron   (d) copper

20. The metal which produces hydrogen gas on reaction with dilute hydrochloric acid as well as sodium hydroxide solution is:

(a) copper   (b) iron   (c) aluminium   (d) sodium

21. Generally metallic oxides are basic and non-metallic oxides are acidic in nature. Solution of which of the following oxides in water will change the colour of blue litmus to red?

(a) sulphur dioxide   (b) magnesium oxide   (c) iron oxide   (d) copper oxide

22. Choose the correct statement from the following:

(a) It is difficult to transport natural gas through pipes.

(b) The disadvantage of natural gas is that it can not be used directly for burning in homes.

(c) Natural gas is stored under high pressure as compressed natural gas.

(d) Natural gas cannot be used for power generation.

23. The calorific value of a fuel is expressed in a unit called:

(a) kilojoule per litre   (b) kilogram per mililitre

(c) kilojoule per gram   (d) kilojoule per kilogram

24. Shyam was cooking potato curry on a *chulha*. To his surprise he observed that the copper vessel was getting blackened from outside. It may be due to:

(a) proper combustion of fuel.   (b) improper cooking of potato curry.

(c) improper combustion of the fuel.   (d) burning of copper vessel.

25. Polyester is repeating units of _____.

(a) Ether   (b) Beads   (c) Carbon   (d) Ester

26. Which one of the following is metal?

(a) C   (b) N   (c) Na   (d) O

27. Which non-metal catches fire if the exposed to air?

(a) Sodium   (b) Phosphorous   (c) Calcium   (d) Uranium

28. The layer containing petroleum oil & gas is

(a) Above that of water   (b) Below water

(c) Between water and sand   (d) Below sand

29. In the presence of water, ignition temperature of paper is

(a) Decrease   (b) Increase   (c) Remain constant   (d) None of these

30. Fire extinguisher

(a) Cuts off the supply of air   (b) Brings down the temperature of fuel

(c) Both (a) & (b)   (d) None of these

31. Which one of the following crops would enrich the soil with nitrogen?

(a) Apple   (b) Pea   (c) Paddy   (d) Potato

32. Fish liver oil is rich in

(a) Vitamin A and B   (b) Vitamin B and C   (c) Vitamin A and D   (d) Vitamin D only

33. The best technique of watering the fruit plants and tall trees is-

(a) chain pump method   (b) sprinkler method

(c) moat   (d) drip method

34. Yeast is used for production of

(a) sugar   (b) alcohol   (c) hydrochloric acid   (d) oxygen

35. Which of the following cannot be used as a food preservative?

(a) Sodium Metabisulphite   (b) Sodium Hydroxide

(c) Sodium Benzoate   (d) Citric Acid

36. The microorganisms which can reproduce and multiply only inside the cells of other organisms are

(a) Protozoa   (b) Fungi   (c) Bacteria   (d) Virus

37. The parasite called plasmodium causes a disease known as

(a) Measles   (b) Polio   (c) Malaria   (d) Dengue

38. The organelles which provide energy for all the activities of cell is

(a) Chloroplast   (b) Mitochondria   (c) Golgi Bodies   (d) Ribosomes

39. A long and branched animal cell is

(a) Muscle cell   (b) Epithelial cell   (c) Nerve cell   (d) Cartilage cell

40. Which of the following organelle is not found in the root cells of a plant?

(a) Nucleus   (b) Vacuole   (c) Mitochondria   (d) Chloroplasts

41. Which of the following cell can change shape?

(a) WBC   (b) Amoeba   (c) RBC   (d) Both (a) and (b)

42. The non-living part of tomato cell in

(a) Cell Membrane   (b) Nucleus   (c) Chloroplast   (d) Cell wall

43. Which of the following animal does not show metamorphosis?

(a) Fish   (b) Frog   (c) Silk moth   (d) Mosquito

44. One of the following occurs in the reproductive system of flowering plants as well as that of humans. This is

(a) Sperm Ducts   (b) Anther   (c) Ovary   (d) Style

45. The offspring formed as a result of sexual reproduction exhibits more variations because

(a) Sexual reproduction is a lengthy process

(b) Genetic material comes from two parents of different species

(c) Genetic material comes from two parents of same species

(d) Genetic material comes from many parents

Section – B (Mathematics)

46. Which of the following is the reciprocal of the reciprocal of a rational number?

(a) −1   (b) 1

(c) 0   (d) rational number itself

47. Which of the following is the number of non-perfect square between the squares of the numbers n and $n + 1$?

(a) $n + 1$ (b) n (c) $2n$ (d) $2n + 1$

48. If the digit in one's place of a number is 3, then the ending of its cube will be:

(a) 3   (b) 6   (c) 7   (d) 9

49. Two years ago, my age was 'x' years, 5 years ago my age was?

(a) $(x + 7)$ years   (b) $(x - 2 - 5)$ years   (c) $(x - 5)$ years   (d) $(x - 3)$ years

50. Which of the following is not a parallelogram?

(a) square   (b) trapezium   (c) rhombus   (d) rectangle

51. Which of the following is the degree of $2 - x^2 + x^3$?

(a) 2   (b) 3   (c) 4   (d) 7

52. 0 reduced by $\dfrac{1}{2}$ is:

(a) $\dfrac{1}{2}$ (b) $-\dfrac{1}{2}$ (c) 2   (d) –2

53. Which of the following can be the square of a natural number 'n'?

(a) sum of the squares of first n natural numbers.

(b) sum of the first n natural numbers.

(c) sum of first $(n - 1)$ natural numbers.

(d) sum of first 'n' odd natural numbers.

54. Which of the following is the co-efficient of y in $-5xyz$?

(a) $-5xz$ (b) $-5x$ (c) $-5y$ (d) -5

55. Which of the following are the next-two triangular numbers 1, 3, 6, 10, _____ and _____

(a) 13 and 17   (b) 14 and 21   (c) 15 and 21   (d) 16 and 25

56. If the parallel sides of a parallelogram are 2 cm apart and their sum is 10 cm, then its area is

(a) 20 cm^2 (b) 5 cm^2 (c) 10 cm^2 (d) none of these

57. If 'x' is an even number, then which of the following is the next odd number?

(a) $x + 1$ (b) $x + 2$ (c) $x - 1$ (d) $x - 2$

58. Which of the following is the usual form of 5.05×10^6?

(a) 505000   (b) 505000000   (c) 5050000   (d) 50500000

59. Which of the following is equal to 1 kilolitre?

(a) 1000 mililitres   (b) 100 dm^3 (c) 1 dm^3 (d) 1000 dm^3

60. Which of the following is the value of $\left(\dfrac{4}{5}\right)^{-9} \div \left(\dfrac{4}{5}\right)^{-9}$?

(a) $\left(\dfrac{4}{5}\right)^{18}$ (b) $\dfrac{4}{5}$ (c) 1   (d) $\left(\dfrac{5}{4}\right)^{9}$

61. Which of the following is the cube root of $\dfrac{-64}{243}$?

(a) $\dfrac{7}{4}$ (b) $-\dfrac{7}{4}$ (c) $\dfrac{4}{7}$ (d) $-\dfrac{4}{7}$

62. Which of the following is the numerical co-efficient of x^2y^2?

(a) 0   (b) 1   (c) x^2 (d) y^2

63. The sides of a pentagon are produced in order. Which of the following is the sum of its exterior angles?

(a) 540°   (b) 180°   (c) 720°   (d) 360°

64. Which of the following is the value of 'x' in $\left(\dfrac{1}{x}-1\right)^2=4$?

(a) $\dfrac{1}{3}$ (b) $-\dfrac{1}{5}$ (c) $-\dfrac{1}{3}$ (d) $\dfrac{1}{5}$

65. 1 micron is equal to $\dfrac{1}{1000000}$ m. Which of the following is its standard form?

(a) 1.1×10^{-5} (b) 1.6×10^{-5} (c) 0.1×10^{-6} (d) 1.0×10^{-6}

66. Which of the following is the number of non-perfect square number between 17^2 and 18^2?

(a) 613   (b) 35   (c) 34   (d) 70

67. Which of the following is equal to x?

(a) $x^{\frac{12}{7}}-x^{\frac{5}{7}}$ (b) $\sqrt[12]{(x^4)^{\frac{1}{3}}}$ (c) $\left(\sqrt{x^3}\right)^{\frac{2}{3}}$ (d) $x^{\frac{12}{7}}\times x^{\frac{7}{12}}$

68. Which of the following quadrilaterals is a regular quadrilateral?

(a) rectangle   (b) square   (c) rhombus   (d) kite

69. Which of the following can be a perfect square?

(a) a number ending in 3 or 7.

(b) a number ending with odd number of zeros.

(c) a number ending with even number of zeros.

(d) a number ending in 2.

70. Which of the following is a pythagorean triplet?

(a) n^2, n^2-1 and n^2+1 (b) $(n-1)$, (n^2-1) and (n^2+1)

(c) $(n+1)$, (n^2-1) and (n^2+1) (d) $2n$, (n^2-1) and (n^2+1)

71. In the following statements which statement is true.

(a) All prime numbers are odd numbers.

(b) Every odd number greater than 1 is prime number.

(c) 2 is a prime number.

(d) Sum of two primes is even.

72. Diagonals of which of the following quadrilaterals do not bisect it into two congruent triangles?

(a) rhombus   (b) trapezium   (c) square   (d) rectangle

73. Which of the following is the value of $[\{(-1)^{-1}\}^{-1}]^{-1}$?

(a) 0   (b) −1   (c) 1   (d) none of these

74. Which of the following is a correct statement?

(a) cube of a negative number is always positive.

(b) cube of a negative number is always negative.

(c) cube of a negative number may be positive or negative.

(d) all of the above.

75. If a number of n-digits is a perfect square and 'n' is an even number, then which of the following is the number of digits of its square root?

(a) $\dfrac{(n-1)}{2}$ (b) $\dfrac{n}{2}$ (c) $\dfrac{n+1}{2}$ (d) $2n$

76. Which of the following expression has value '0' at $x=-1$ and $y=2$?

(a) $2y-2x^2$ (b) $2y^2-x$ (c) $2x^2-2y$ (d) $2x^2-y$

77. What kind of polynomial is pqr?

(a) Monomial   (b) Binomial   (c) Trinomial   (d) None of these

78. Value of $[100 - (99)^0] \times 100$

(a) 10000   (b) 100   (c) 9900   (d) 99000

79. Which of the following is the difference between the squares of 21 and 22?

(a) 21   (b) 22   (c) 42   (d) 43

80. Which of the following is the standard form of 0.00001275?

(a) 1.275×10^{-5} (b) 1.275×10^5 (c) 127.5×10^{-7} (d) 127.5×10^7

81. Which of the following is equal to its own cube?

(a) -1 (b) -2 (c) -3 (d) -9

82. If $8^{x+1} = 64$, then value of 3^{2x+1} is

(a) 1   (b) 3   (c) 9   (d) 27

83. If a, m, n are positive integers, then $\left\{ \sqrt[m]{\sqrt[n]{a}} \right\}^{mn}$ is equal to

(a) a^{mn} (b) a (c) $a^{m/n}$ (d) 1

84. If $3x + \dfrac{2}{x} = 7$, then $\left(9x^2 + \dfrac{4}{x^2} \right) =$

(a) 25   (b) 37   (c) 49   (d) 30

85. If $x^2 + \dfrac{1}{x^2} = 102$, then $x - \dfrac{1}{x} =$

(a) 8   (b) 10   (c) 12   (d) 13

86. If $49a^2 - b = \left(7a + \dfrac{1}{2} \right) \left(7a - \dfrac{1}{2} \right)$, then value 'b' is

(a) 0   (b) $\dfrac{1}{4}$ (c) $\dfrac{1}{\sqrt{2}}$ (d) $\dfrac{1}{2}$

87. If the volumes of two cubes are in the ratio 8 : 1, then ratio of their edges is

(a) 8 : 1   (b) $2\sqrt{2} : 1$ (c) 2 : 1   (d) None of these

88. The number of surfaces of a hollow cylindrical object is

(a) 1   (b) 2   (c) 3   (d) 4

89. Radius of a wire is decreased to one third. If volume remains the same, the length will become

(a) 3 times   (b) 6 times   (c) 9 times   (d) 27 times

90. If sum of all the edges of a cube is 36 cm, then the volume (in cm³) of that cube is

(a) 9   (b) 27   (c) 219   (d) 729

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