Studymate Foundation Paper

Date : 20/01/2019 Duration : 90 Min. Max. Marks : 90	Science & Mathematics (Set-1)	CLASS VIII

General Instructions:
1. All questions are compulsory.
2. Each question is allotted ONE mark for each correct response.
3. No deduction from the total score will be made if no response is indicated for the question in the answer sheet.
4. There is only **ONE** correct response for each question. Filling up **MORE THAN ONE** response in each question will be treated as wrong response and marks for wrong response will be deducted accordingly.
5. Use of calculators is not allowed.
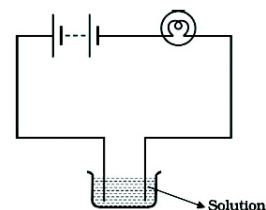
Section A – Science

1. Which of the following change appreciably when a batsman hits a moving cricket ball?
   (i) Shape   (ii) Direction   (iii) Size   (iv) Speed
   (A) (i) and (ii)   (B) (ii) and (iii)   (C) (i) and (iii)   (D) (ii) and (iv)

2. A pressure of 10 kPa acts on area of 0.3 m². The force acting on the area will be:
   (A) 3000 N   (B) 30 N   (C) 3 N   (D) 300 N

3. Which of the following is not an advantage of friction?
   (A) it enables drawing to be made on paper   (B) it enables fallen things to be picked up
   (C) it enables rubber pads to be rubbed off   (D) it enables vechicles to move on ground

4. Electrolytes conduct electricity due to the movement of:
   (A) electrodes   (B) atoms   (C) electrons   (D) ions

5. 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.

6. The frictional force exerted by a fluid is called:
   (A) brag   (B) drab   (C) drag   (D) tread

7. The ultrasound waves can penetrate into matter to a large extent because they have:
   (A) very high speed   (B) very high frequency
   (C) very high quality   (D) very high amplitude

8. A charged balloon attaches to a wall because of _____
   (A) Muscular force   (B) Electrostatic force   (C) Magnetic force   (D) Gravitational force

9. 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)

10. Friction is a _____

(A) type of contact force.
(B) type of non-contact force.
(C) type of pressure.
(D) form of heat.

11. The pitch of sound depends on the _____ of the vibrating body.

(A) amplitude
(B) noise
(C) frequency
(D) medium of propagation

12. What is the cause of change in motion or change in the state of motion?

(A) Pressure
(B) Atmospheric Pressure
(C) Friction
(D) Force

13. 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

14. 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

15. 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?
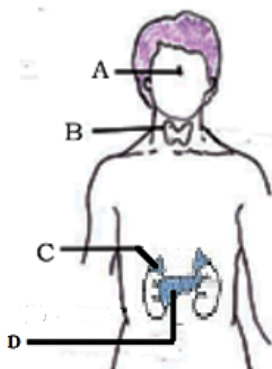

(A)   (B)   (C)   (D)

16. The major component of LPG is:

(A) hydrogen
(B) carbon monoxide
(C) methane
(D) butane

17. Which of the following is used as a source of hydrogen gas needed to manufacture fertilisers?

(A) biogas
(B) natural gas
(C) coal gas
(D) petroleum gas

18. The similarity between artificial silk and cotton is that:

(A) both are non-biodegradable
(B) both melt on heating
(C) both are amide polymers
(D) both are cellulose polymers

19. The plastic which is coated on the uniforms of firemen to make them fire-resistant is:

(A) bakelite
(B) polythene
(C) teflon
(D) melamine

20. The element whose oxide will turn red litmus solution to blue will be:

(A) sodium
(B) sulphur
(C) carbon
(D) phosphorus

21. Sulphur element is said to be:

(A) ductile
(B) hard
(C) malleable
(D) brittle

22. The metal stored in kerosene due to its high reactivity with air and water is

(A) Magnesium
(B) Zinc
(C) Sodium
(D) Calcium

23. Which of the following is usually referred to as black gold:

(A) coke
(B) coal tar
(C) petroleum
(D) coal

24. A heap of green leaves is lying in one corner of a park. The green leaves in the heap burn with difficulty because:

(A) they contain a tough material called cellulose

(B) they contain a lot of water

(C) they contain a green pigment chlorophyll

(D) they do not get sufficient oxygen for burning

25. The outermost zone of a candle flame is the:

(A) least hot part   (B) coldest part

(C) hottest part   (D) moderately hot part

26. Which of the following substances has the lowest ignition temperature?

(A) kerosene   (B) spirit   (C) diesel   (D) mustart oil

27. Drinking water can be made absolutely safe by adding some:

(A) aspirin tablets   (B) iodine tablets   (C) chlorine tablets   (D) chlorophyll tablets

28. Which of the following are used in electric water filters to kill all the harmful micro-organisms present in tap water and make it absolutely safe for drinking?

(A) infrared radiation   (B) gamma radiation

(C) visible radiation   (D) ultraviolet radiation

29. Which of the following elements is a metalloid?

(A) sodium   (B) sulphur   (C) silicon   (D) silver

30. LPG stands for

(A) Liquefied Petroleum Gas   (B) Liquid Petroleum Gas

(C) Liquefied Petro Gas   (D) Liquefied Petrochemical Gas

31. Which of the following is a post-harvesting practice

(A) Crop rotation   (B) Tilling   (C) Weeding   (D) fumigation

32. The yield of paddy crop can be increased due to

(i) low temperature   (ii) manuring

(iii) clayey soil   (iv) low moisture content in soil

Choose the correct option

(A) (i), (ii) and (iii)   (B) (ii) and (iii)   (C) (iii) and (iv)   (D) (ii) only

33. Nitrogen fixing cyanobacteria

(A) converts ammonia into nitrates

(B) are found in root nodules of leguminous plants

(C) are photosynthetic

(D) all of these

34. Which of the following is not true about antibiotics:

(A) obtained from fungi   (B) available for cattle and poultry birds also

(C) also cures viral diseases   (D) also kills beneficial bacteria in our body

35. Botulism is a type of

(A) food poisoning   (B) food preservation method

(C) viral disease   (D) disease treatment method

36. Plants, animals and microbes, in an area, interacting with their physical surrounding is called

(A) Sanctuary   (B) ecosystem   (C) food chain   (D) Biosphere

37. Odd one out

(A) Dodo   (B) Great Indian Bustard

(C) Red headed Vulture   (D) Siberian crane

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38. Which is common for both chloroplast and mitochondria

    (A) Rod shape and are absent in animal cells

    (B) DNA and foldings in inner membrane

    (C) Double membrane and DNA

    (D) Double membrane and foldings in inner membrane

39. Match the correct pair:

    (I)   Cell wall   (i)   hydrolytic enzymes

    (II) Nucleus   (ii)   protein factories

    (III) Ribosomes   (iii) cellulosic

    (IV) Lysosome   (iv) double membrane

	(I)	(II)	(III)	(IV)			(I)	(II)	(III)	(IV)
(A)	(iv)	(ii)	(i)	(iii)		(B)	(iii)	(i)	(ii)	(iv)
(C)	(iv)	(i)	(ii)	(iii)		(D)	(iii)	(iv)	(ii)	(i)

40. Identify the prokaryotic cell

    (A) Virus   (B) cyanobacteria   (C) Amoeba   (D) Yeast

41. Identify the given cellular apparatus and its formation site in human female body

    (A) Zygote, fallopian tube

    (B) Embryo, fallopian tube

    (C) Zygote, uterus

    (D) Zygote, Uterus

42. Choose the false statement about placenta

    (A) junction of exchange of substances

    (B) Situated on uterus wall

    (C) Formed after fertilization and before implantation

    (D) contains numerous blood capillaries

43. Removal of which gland from young tadpoles will prevent its metamorphosis

    (A) liver   (B) testes   (C) pancreas   (D) thyroid

44. Identify the endocrine gland in the given below diagram responsible for the abnormal increase in breathing and heart beat rate on certain ocassions

    (A) A   (B) B   (C) C   (D) D

45. Which one is incorrect

    (A) mother is responsible for the sex of the child

    (B) a girl can be pregnant during menstruation

    (C) voice of a girl becomes low piched after puberty

    (D) all of these

Section – B (Mathematics)

46. Which of the following is the multiplicative inverse of 7^{-2}?

(A) 7^2 　　　　(B) $\dfrac{1}{7^2}$ 　　　　(C) 7×2 　　　　(D) 4

47. In which type of interest principal changes year after year?

(A) Compound interest (B) Simple interest 　(C) both of these 　　(D) none of these

48. Which of the following is the formula to find sum of all interior angles of a polygon?

(A) $n \times 180°$ 　　(B) $n \times 2$ 　　(C) $(n-2) \times 180°$ 　　(D) $\dfrac{n(n-3)}{2}$

49. Which of the following is the reciprocal of $\dfrac{-1}{3}$?

(A) -3 　　　　(B) 3 　　　　(C) $\dfrac{1}{3}$ 　　　　(D) $\dfrac{3}{2}$

50. If the coordinates of a point P are (3, 4), then its abscissa is

(A) 4 　　　　(B) -4 　　　　(C) -3 　　　　(D) 3

51. Discount is a reduction given on the

(A) marked price 　　(B) cost price 　　(C) selling price 　　(D) none of these

52. Which of the following has area = base × corresponding height?

(A) Rectangle 　　(B) Square 　　(C) Trapezium 　　(D) Parallelogram

53. Coefficient of x^4 in the expression $-3x^4 + 5x^3 + 7$ is

(A) 3 　　　　(B) 5 　　　　(C) -3 　　　　(D) 7

54. Name of the quadrilateral whose diagonals are equal and bisect each other perpendicularly is

(A) Rhombus 　　(B) Square 　　(C) Parallelogram 　　(D) Rectangle

55. A bar graph showing two sets of data simultaneously is called a

(A) Histogram 　　(B) Pie-chart 　　(C) Double bar graph (D) Bar graph

56. Integer are not closed under _____.

(A) addition 　　(B) subtraction 　　(C) multiplication 　　(D) division

57. Which of the following is a 3-Dimensional?

(A) Cube 　　(B) Rectangle 　　(C) Square 　　(D) Circle

58. Which of the following is the simplified exponential form of $2^{-7} \times 2^8$?

(A) 2^{56} 　　(B) 2^{-56} 　　(C) 2^1 　　(D) 2^{15}

59. If $2x + 5 = 0$, then which of the following is true?

(A) $2x = -5$ 　　(B) $2x = 5$ 　　(C) $5x = -2$ 　　(D) $5 = \dfrac{x}{2}$

60. Which of the following is perfect cube?

(A) 270000 　　(B) 10000 　　(C) 64000 　　(D) 900

61. Three members of pythagorean triplet are

(A) $m^2,\ m^2 + 1,\ m^2 - 1$ 　(B) $m,\ m^2,\ m^2 + 1$ 　(C) $2m,\ m^2,\ m + 1$ 　(D) $2m,\ m^2 - 1,\ m^2 + 1$

62. Diameter (D) of a circle is related to its radius (r) as

(A) $D = r$ 　　(B) $D = 2r$ 　　(C) $2D = r$ 　　(D) $D = \dfrac{r}{3}$

63. How many digits will be there in the square root of 27225?

(A) 4   (B) 2   (C) 5   (D) 3

64. If S.P. > C.P., then there will be

(A) Loss

(B) No profit and no loss

(C) Profit

(D) None of these

65. Volume of cuboid can be calculated as

(A) length × breadth   (B) length × height   (C) base × height   (D) base area × height

66. A pyramid with triangle as its base is called

(A) triangular pyramid   (B) prism   (C) square pyramid   (D) none of these

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

(A) Rectangle   (B) Square   (C) Rhombus   (D) Kite

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

(A) 1   (B) −1   (C) 0   (D) The number itself

69. What should be subtracted from $\dfrac{-5}{4}$ to get −1?

(A) $\dfrac{-1}{4}$ (B) $\dfrac{1}{4}$ (C) 1   (D) $\dfrac{-3}{4}$

70. If $\dfrac{2x}{5} = 4$, the value of x is _____

(A) 10   (B) −10   (C) $\dfrac{-8}{5}$ (D) $\dfrac{8}{5}$

71. How many number of faces does a solid sphere has?

(A) 1   (B) 2   (C) Many   (D) None

72. Which of the following is one's digit of a number, when divided by 5 gives a remainder of 3?

(A) 8   (B) 3   (C) 3 or 8   (D) None of these

73. If base area of a room 12 m^2 and height is 3 m, then volume is

(A) 4 m^3 (B) 36 m^3 (C) 12 m^3 (D) 18 m^3

74. Which of these rational numbers is greater than $\dfrac{5}{7}$?

(A) $\dfrac{7}{9}$ (B) $\dfrac{3}{11}$ (C) $\dfrac{7}{12}$ (D) $\dfrac{6}{13}$

75. The value of x in the equation $\dfrac{1}{x+1} = 5$ is

(A) $\dfrac{-5}{4}$ (B) $\dfrac{5}{4}$ (C) $\dfrac{4}{5}$ (D) $\dfrac{-4}{5}$

76. The difference between the highest and the lowest value of the observations in a data is called

(A) Mean   (B) Class Mark   (C) Median   (D) Range

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

(A) 1.275×10^{-5} (B) 1.275×10^{5} (C) 1.275×10^{-7} (D) 1.275×10^{7}

78. If an increase in one quantity brings about a corresponding decrease in the other and vice-versa, then the two quantities vary

(A) directly (B) inversely

(C) sometimes directly sometimes inversely (D) none of these

79. If x and y are in a direct proportion, then which of the following is correct?

(A) $x - y$ = constant (B) $x + y$ = constant (C) xy = constant (D) $\dfrac{x}{y}$ = constnat

80. Which of the following is the common factor of $21x^2y$ and $35xy^2$?

(A) 7 (B) $7xy$ (C) xy (D) None of these

81. What is the reciprocal of $\left(\dfrac{-3}{4}\right)^0$?

(A) -1 (B) 1 (C) $\dfrac{-4}{3}$ (D) $\dfrac{4}{3}$

82. If cost of 1 notebook is $(x - 2)$, find the cost of $(x - 5)$ notebooks.

(A) $x^2 - 7x + 10$ (B) $x^2 + 7x + 10$ (C) $x^2 - 7x - 10$ (D) $x^2 + 7x - 10$

83. The values of A and B in the given addition are respectively

$$\begin{array}{cccc} & 2 & 3 & A \\ & A & 3 & B \\ \hline & 6 & B & 1 \end{array}$$

(A) 4, 7 (B) 7, 4 (C) 5, 6 (D) 6, 5

84. A die is thrown once. What is the probability of getting a multiple of 3?

(A) $\dfrac{1}{3}$ (B) $\dfrac{1}{2}$ (C) $\dfrac{1}{4}$ (D) $\dfrac{1}{5}$

85. Sonam saves 15% of her income per month. If she saves Rs. 450 per month, her income is

(A) Rs. 4000 (B) Rs. 2500 (C) Rs. 3500 (D) Rs. 3000

86. 42 farmers reap a field in 15 days. 18 farmers will reap the field in

(A) 35 days (B) 25 days (C) 30 days (D) 28 days

87. For what value of a, the number $41a56$ is divisible by 6?

(A) 2, 5, 8 (B) 5, 6, 9 (C) 1, 3, 4 (D) 1, 4, 8

88. The value of $(x^2 - 5)$ at $x = -1$, is

(A) -4 (B) -2 (C) -1 (D) -5

89. Which of the following quadrilaterals is not a parallelogram?

(A) Rectangle (B) Rhombus (C) Square (D) Kite

90. If 30% of a is 45, then find 'a'

(A) 150 (B) 20 (C) 200 (D) 300

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