

Studymate Foundation Paper

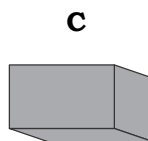
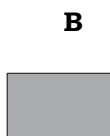
Date : 23/12/2018 Duration : 90 Min. Max. Marks : 90	Science & Mathematics (Set-1)	CLASS
		VIII

General Instructions:

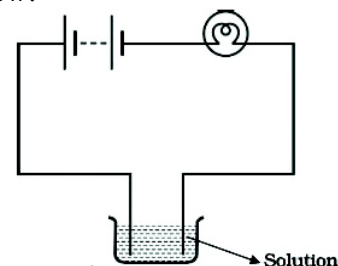
- All questions are compulsory.
- Each question is allotted ONE mark for each correct response.
- No deduction from the total score will be made if no response is indicated for the question in the answer sheet.
- There is only **ONE** correct response for each question. Filling up **MORE THAN ONE** response in each question will be treated as wrong response and marks for wrong response will be deducted accordingly.
- Use of calculators is not allowed.

Section A – Science

- 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



- maximum in position A
 - maximum in position B
 - maximum in position C
 - equal in all cases
- Whenever the surfaces in contact tend to move or move with respect to each other, the force of friction comes into play
 - only if the objects are solid.
 - only if one of the two objects is liquid.
 - only if one of the two objects is gaseous.
 - irrespective of whether the objects are solid, liquid or gaseous.
 - An object is vibrating at 50 hertz. What is its time period?
 - 0.02 s
 - 2 s
 - 0.2 s
 - 20.0 s
 - 1 hertz is equal to
 - 1 vibration per minute
 - 10 vibrations per minute
 - 60 vibrations per minute
 - 600 vibrations per minute
 - Which of the following solutions will not make the bulb in figure glow?
 - sodium chlorides
 - copper sulphate
 - silver nitrate
 - sugar solution in diluted water
 - The earth's plate responsible for causing earthquakes is
 - the crust of the earth
 - the mantle of the earth
 - the inner core of the earth
 - 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)

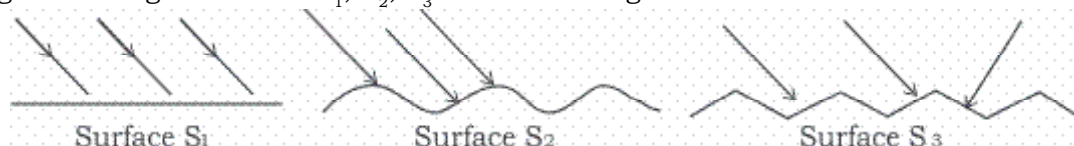
8. Consider the list of terms given below

- (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)

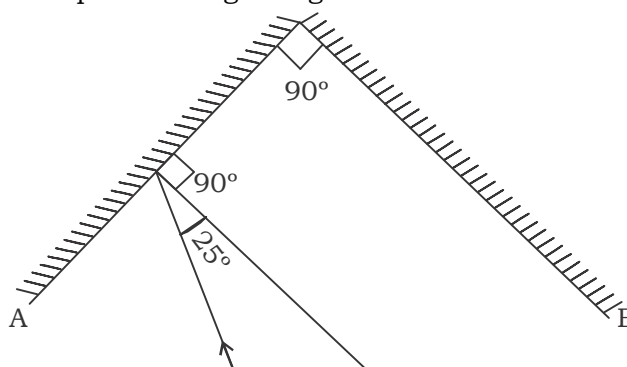
9. Light is falling on surface S_1 , S_2 , S_3 as shown in figure



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?

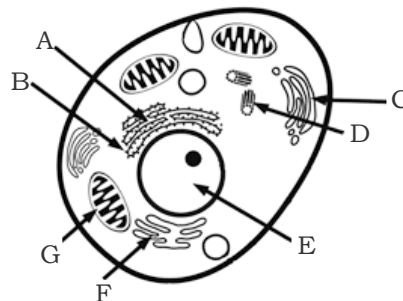


14. Incomplete combustion of fuel such as petrol and diesel gives

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

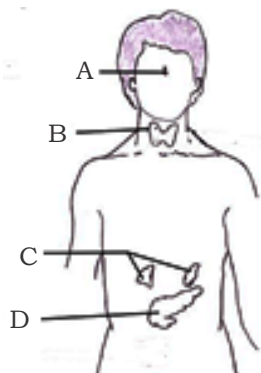
15. Which of the following procedures will give you water free from all impurities?
 (a) adding chlorine tablets (b) distillation
 (c) boiling (d) filtration
16. Which is a thermosetting plastic?
 (a) Melamine (b) Polythene (c) PVC (d) Nylon
17. Which of the following is not a common property of plastics?
 (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 millilitre
 (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. Name the scientist who showed that lightning and the spark from your clothes are essentially the same phenomena
 (a) Thomas Alva Edison (b) Benjamin Franklin
 (c) Franklin D. Roosevelt (d) Isaac Newton
29. The pitch of sound depends on the _____ of the vibrating body.
 (a) amplitude (b) noise
 (c) frequency (d) medium of propagation

- 30.** What is the cause of change in motion or change in the state of motion?
(a) Pressure (b) Atmospheric Pressure
(c) Friction (d) Force
- 31.** Which of the following elements is not found in chemical fertilizers
(a) Potassium (b) Iron (c) Nitrogen (d) Phosphorus
- 32.** Which of the following will not be helpful in retaining the nutrients of agricultural field
(a) Irrigation (b) Manuring (c) Crop rotation (d) Field fallowing
- 33.** UHT is a food preservation method for
(a) Fruits (b) Milk (c) Fish (d) All of these
- 34.** The shape of milk curdling bacteria is :
(a) rod-like (b) spiral (c) curved (d) spherical
- 35.** Pathogenic microorganisms present inside a host are killed by medicines called
(a) Antibodies (b) Antibiotics (c) Vaccines (d) Pain killers
- 36.** Which one of these is not a wildlife reserve in India for the conservation of tigers?
(a) Corbett (b) Bandhavgarh (c) Ranthambhore (d) Periyar
- 37.** Choose the incorrect pairs
(i) Species - naturally interbreeding dissimilar organisms
(ii) Endemic fauna - animals found exclusively in an area
(iii) Sanctuary - animals are protected in human captivity
(iv) Ecosystem - interacting organisms in their physical environment
(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (iii) (d) (iii) and (iv)
- 38.** Observe the animal cell carefully and identify the organelles which perform ATP synthesis, cell division and controlling all metabolic activities respectively



- (a) C, D, E (b) G, D, E (c) A, G, B (d) B, C, E
- 39.** Elongated and contractile cells are found in
(a) Brain (b) Spinal cord (c) Heart (d) Liver
- 40.** Which of the following is not related to the term "prokaryote"
(a) Nucleoid (b) Bacteria (c) Ribosomes (d) Mitochondria
- 41.** Considering the menstrual cycle in a female of 28 days, if her menstruation starts on 25th November, which could be the probable date on which the egg will enter inside the fallopian tube:
(a) 9th December (b) 15th December (c) 25th December (d) 26th November
- 42.** Which of the following process cannot occur in a female with blocked fallopian tube
(a) in- vitro fertilization (b) in- vivo fertilization
(c) ovulation (d) implantation of growing embryo
- 43.** Which of the following is incorrect for reproduction in humans
(a) Formation of gametes occurs separately (b) embryo formation occurs in uterus
(c) Fertilization occurs in fallopian tube (d) placenta forms after implantation

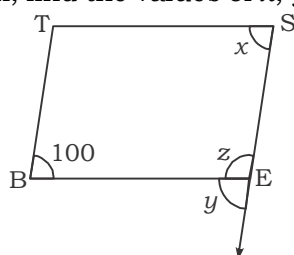
44. Identify the endocrine gland in the given below diagram, that secretes its hormone few hours after taking meal and is not regulated by the "master gland".



- (a) A (b) B (c) C (d) D
45. What could be the possible sex chromosome received by a girl from her father
- (a) X (b) Y
(c) both X and Y (d) doesn't matter whether it is X or Y

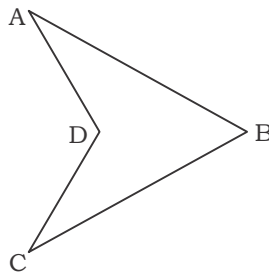
Section – B (Mathematics)

46. What will be the amount when interest is compounded half yearly?
- (a) $P\left(1 + \frac{R}{200}\right)^{\frac{1}{2}n}$ (b) $P\left(1 + \frac{2R}{100}\right)$ (c) $P\left(1 + \frac{R}{200}\right)^{2n}$ (d) $P\left(1 + \frac{R^2}{200}\right)^{2n}$
47. Subtraction of a number is the same as addition of its additive inverse
- (a) true (b) false
(c) can't say (d) can't be determined
48. At unit's place, the square number can have
- (a) 0, 9, 6 (b) 4, 5, 1 (c) 2, 3 (d) both (a) and (b)
49. How many integral square roots does a perfect square number has?
- (a) 2 (b) 1 (c) 0 (d) infinite
50. While multiplying a polynomial by a monomial, we multiply every term in the polynomial by
- (a) Binominal (b) Polynomial (c) Constant term (d) monomial
51. Which of the following is a linear equation in one variable?
- (a) $x^2 + 1 = 0$ (b) $y + y^2 = 0$ (c) $2xy + 5 = 0$ (d) $2x - 3 = 0$
52. A diagonal of a polygon is obtained by connecting
- (a) two consecutive vertices (b) two non-consecutive vertices
(c) two opposite sides (d) two consecutive angles
53. In figure BEST is a parallelogram, find the values of x , y and z .



- (a) $x = 80, y = 100, z = 100$ (b) $x = 100, y = 80, z = 100$
(c) $x = 100, y = 100, z = 80$ (d) $x = 80, y = 80, z = 100$

54. A bag contains 4 red balls and 2 yellow balls. A ball is drawn at random. Probability of getting a red ball.
- (a) $\frac{4}{4}$ (b) $\frac{2}{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$
55. A gardener wishes to plant as many saplings as the number of rows. How many rows be used to plant 6084 saplings?
- (a) 12168 (b) 62 (c) 78 (d) none of these
56. Which of the following pairs are factors of $10x^2 - 3x - 1$
- (a) $(2x + 5), (x + 1)$ (b) $(x + 5), (x - 3)$ (c) $(10x + 1), (x - 5)$ (d) $(5x + 1), (2x - 1)$
57. If SP = Rs. 815 and gain = 25%, then CP = _____
- (a) Rs. 521 (b) Rs. 621 (c) Rs. 652 (d) none of these
58. A number increased by 12% gives 95.2. The number is
- (a) 85 (b) 90 (c) 100 (d) 112
59. If A earns 50% more than B, then B earns _____ % less than A.
- (a) 50% (b) 25% (c) 10% (d) $33\frac{1}{3}\%$
60. If 4 people can complete a work in 3 days, the number of people required to complete work in 1 day is
- (a) 6 (b) 8 (c) 12 (d) 18
61. A parallelogram of base 28 cm and height 14 cm has area equal to a triangle whose base is 112 cm. The height of the triangle is
- (a) 15 cm (b) 22 cm (c) 25 cm (d) 7 cm
62. The additive inverse of $\frac{-a}{b}$ is
- (a) $\frac{a}{b}$ (b) $\frac{-b}{a}$ (c) $\frac{b}{a}$ (d) $\frac{-a}{b}$
63. Raman and Satish were two candidates in an election. Satish got 62% votes and is elected by a margin of 144 votes. What was the total number of votes casted?
- (a) 500 (b) 700 (c) 600 (d) 800
64. The given quadrilateral ABCD is a



- (a) concave quadrilateral (b) convex quadrilateral
(c) trapezium (d) parallelogram
65. A cube is having a surface area of 150 m^2 . What will be its volume?
- (a) 75 m^3 (b) 125 m^3 (c) 27 m^3 (d) 25 m^3
66. The standard form of 15240000 is
- (a) 1.524×10^6 (b) 15.24×10^7 (c) 1.524×10^8 (d) 1.524×10^7
67. After allowing a discount of 25%, a trouser was sold for Rs. 210. Find the market price shirt.
- (a) Rs. 300 (b) Rs. 250 (c) Rs. 200 (d) Rs. 280

- 68.** _____ is a reduction given on marked price
(a) Marked price (b) discount (c) Sale price (d) None of these
- 69.** Which of the following is not a perfect square?
(a) 3600 (b) 1210 (c) 22500 (d) 4
- 70.** How many equal sides does a cube has?
(a) 2 (b) 1 (c) 4 (d) 6
- 71.** Which of the following is NOT a perfect cube?
(a) 729 (b) 1728 (c) 1000 (d) 225
- 72.** How many terms does a monomial expression has?
(a) 1 (b) 3 (c) 2 (d) 2
- 73.** $(x + a)(x + b) =$
(a) 1 (b) $x^2 + (a^2 + b^2) + 2ab$
(c) 0 (d) $x^2 + (a + b)x + ab$
- 74.** $\sqrt{3}$ becomes rational on multiplying by which of the following numbers?
(a) $\sqrt{3}$ (b) $3\sqrt{3}$ (c) $9\sqrt{3}$ (d) All of these
- 75.** A regular polygon having 3 sides is named as
(a) a square (b) a trapezium (c) a kite (d) a triangle
- 76.** A quadrilateral with only one pair of opposite sides which are parallel
(a) square (b) rhombus (c) trapezium (d) rectangle
- 77.** A dice is thrown. find, the probability of getting a prime number
(a) $\frac{2}{3}$ (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) $\frac{1}{4}$
- 78.** If base area of room 12 m² and height is 3 m, then volume is
(a) 4 m³ (b) 36 m³ (c) 12 m³ (d) 18 m³
- 79.** The value of $\sqrt{\frac{1}{16} + \frac{1}{9}}$ is
(a) $\frac{12}{5}$ (b) $\frac{7}{12}$ (c) $\frac{12}{7}$ (d) $\frac{5}{12}$
- 80.** The value of x in the equation $\frac{1}{x+1} = 5$ is
(a) $-\frac{5}{4}$ (b) $\frac{5}{4}$ (c) $\frac{4}{5}$ (d) $-\frac{4}{5}$
- 81.** The class mark of the class interval (20 to 30) is
(a) 20 (b) 25 (c) 30 (d) 10
- 82.** 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
- 83.** 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
- 84.** Which of the following points lie on the y-axis?
(a) (0, 4) (b) (4, 0) (c) (0, 0) (d) (3, 3)
- 85.** The point (3, 2) is nearer to
(a) x-axis (b) y-axis (c) origin (d) none of these

- 86.** Which of the following is a formula to find the sum of interior angles of quadrilateral of n -sides?
- (a) $\frac{n}{2} \times 180^\circ$ (b) $\left(\frac{n+1}{2}\right) \times 180^\circ$ (c) $\left(\frac{n-1}{2}\right) \times 180^\circ$ (d) $(n-2) \times 180^\circ$
- 87.** If x is an even number, which is the next odd number?
- (a) $x + 1$ (b) $x + 2$ (c) $x - 1$ (d) $x - 2$
- 88.** What is the reciprocal of $\left(\frac{-3}{4}\right)^\circ$?
- (a) -1 (b) 1 (c) $\frac{-4}{3}$ (d) $\frac{4}{3}$
- 89.** Which of the following is the common factor of $21x^2y$ and $35xy^2$?
- (a) 7 (b) $7xy$ (c) xy (d) none of these
- 90.** If $x = 4y$, then x and y vary _____ with each other.
- (a) inversely (b) directly
(c) insufficient information (d) none of these

$$x \cdot x \cdot x \cdot x \cdot x \cdot x$$