

SITE- 2011

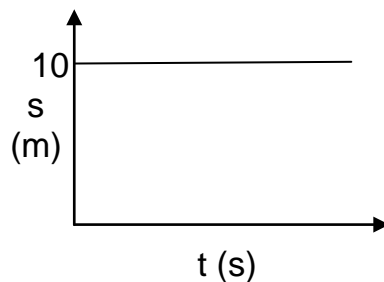
PHYSICS

CLASS: VIII

1. In the given circuit, the current flowing through $3\ \Omega$ resistance is

- a. 1 A
- b. 1.5 A
- c. 2 A
- d. 2 A

2. The position time graph of a particle moving along a straight line is as shown . The distance traveled in 10 seconds by the particle



- a. 10 m
- b. 8 m
- c. 0 m
- d. 6 m

3. Which of the following is not a form of mechanical energy

- a. Potential Energy
- b. Kinetic Energy
- c. Heat Energy
- d. None of these

4. A train 50 m long passes over a bridge at a velocity of 30 km/ h. If it takes 36 seconds to cross the bridge, the length of bridge will be

- a. 100 m
- b. 200 m
- c. 250 m
- d. 300 m

5. Choose the wrong statement

- a. 1 kg wt = 9.8 N
- b. Momentum is product of mass and velocity
- c. Action and reaction forces acts on same body.
- d. Momentum is conserved in the absence of external force

6. A body of mess 100 g is moving with a velocity of 15 m / s . The momentum associated is

- a. 0.5 kg m / s
- b. 1.5 kg m / s
- c. 2.5 kg m / s
- d. 3.2 kg m / s

7. Aluminum has a density of 2.7 g / cm³ . The mass of 15 cm³ aluminum is

- a. 45 g
- b. 40.5 g
- c. 80 g
- d. 100g

8. Kilowatt hour (k W h) represents the unit of

- a. Power
- b. Impulse
- c. Momentum
- d. Energy

9. A photocell converts light energy to

- a. Chemical Energy
- b. Electrical Energy
- c. Heat Energy
- d. Mechanical Energy

10. A bird flying in the sky has

- a. Kinetic energy only
- b. Potential energy only
- c. Both kinetic and potential energy
- d. None of these

11. With the increase in temperature, the density of a substance, in general,

- a. Increases
- b. Decreases
- c. First increases then decreases
- d. First decreases then increases

12. In which of the following media will sound travel the fastest?

- A. Solid
- b. Liquid
- c. Gases
- d. Both liquid and gases.

13. A wave completes 24 cycles in 0.8 seconds. The frequency of wave is

- a. 30 H z
- b. 8 H z
- c. 24 H z
- d. 12 H z

14. Sound waves are

- a. Longitudinal
- b. Transverse
- c. Neither longitudinal nor transverse
- d. Sometimes longitudinal and sometimes transverse

15. The rear view mirror used in automobile is

- a. Concave mirror
- b. Convex mirror
- c. Plane mirror
- d. None of these

16. When an object is at infinity from a concave mirror, the image is formed at

- a. Focus
- b. At infinity
- c. Between focus and center of curvature
- d. None of these

17. Light year is unit of

- a. Time
- b. Distance
- c. Intensity of light
- d. None of these

18. When object is kept at the focus of convex mirror the image formed is

- a. Real
- b. Virtual
- c. Enlarged
- d. None of these

19. How many electrons constitute a current of one microampere?

- a. 6.25×10^6
- b. 6.25×10^{12}
- c. 6.25×10^9
- d. 6.25×10^{15}

20. Magnetic effect of current was discovered by

- a. Faraday
- b. Lorenz
- c. Oersted
- d. Alexandra Volta

21. A magnetic field can exert a force on a

- a. Stationary magnet
- b. Moving charge
- c. Moving magnet
- d. None of these

22. A dynamo converts

- a. Electrical Energy to mechanical Energy
- b. Mechanical Energy to electrical Energy
- c. Electrical Energy to light Energy
- d. Light energy to electrical Energy.

23. Electricians use rubber while working as

- a. Rubber is a conductor
- b. Rubber is a semi conductor
- c. Rubber is an insulator
- d. None of these.

CHEMISTRY

1. The drawback of Rutherford's model is its inability to

- a. explain the stability of an atom
- b. explain the spectra of singly electron species
- c. Both the above
- d. None.

2. If two elements A and B contain 6 and 2 electrons in their N shell and M shell respectively. Then the ratio of atomic numbers of A and B is

- a. 3:4 b. 1:2 c. 6:7 d. 2:1

3. Which of the following is a radio active element?

- a. Thorium b. Lead c. Barium d. Iridium

4. Which of the following arrangements of electrons represent magnesium Mg?

- a. 2,8,1 b. 2,8,2 c. 2,8,3 d. 2,8,4

5. If we add potassium nitrate to ice it will result in

- a. Increase in melting point of ice b. Decrease in melting point of ice
c. Neither a nor b d. Change in colour of ice

6. The atomicity of an element tells about its

- a. Chemical properties b. Physical properties
c. Number of atoms or element present in a molecule
d. None

7. Separation of mixture of the solids by fractional crystallization depends on the difference in their

- a. Densities b. Solubility's c. Shape of crystals d. Size of crystals

8. Which of the following is an element ?

- a. Marble b. Graphite c. Washing Stone d. Stone

9. Black diamond are called

- a. Coronado b. Carbonado c. Carbond d. Arnoid

10. Which of the following attractive forces exists between different layers of graphite?

- a. Gravitational forces b. Vander waals forces
c. Coulombic forces d. None

11. Water gas is

- a. $\text{CO} + \text{CO}_2$ b. $\text{CO} + \text{N}_2$ c. $\text{CO} + \text{H}_2$ d. $\text{CO} + \text{N}_2 + \text{H}_2$

12. Main constituent of marsh gas is

- a. Ethane b. Acetylene c. Ethene d. Methane

13. When glass is heated it

- a. Does not melt at a fixed temperature b. Vapourises
c. Melts only above 1000°C d. None

14. Hydrogen burns with

- a. A smoky flame b. A blue flame
c. A pale yellow flame d. A green flame

15. Who called hydrogen as inflammable air?

- a. Henry Cavendish b. Lavoisier
c. Priestly d. None

16. The -----are good conductors of heat and electricity whereas ----- are not. ----- being a nonmetal is a good conductor of electricity.

Metals are generally solid at room temperature, while ----- is only liquid metal. Non metals are generally solid or gases whereas ----- being exception is a liquid at room temperature.

MATCH THE FOLLOWING

17. COLUMN A

- a. Graphite
- b. Platinum
- c. Mercury
- d. Bromine

COLUMN B

- p. non-metal
- q. Lustrous
- r. noble metal
- s. metal

18. Though most metals undergo similar kind of reactions. The 'vigour' are arranged in order of their reactivity in a series called activity series.

K
Ca
Na
Mg
Al
Zn
Fe
H
Cu
Hg
Ag
Au

Activity decrease

18. Which of the following is most reactive?

- a. Sodium
- b. Potassium
- c. Calcium
- d. Magnesium

5. The poisonous chemical substances which are used to kill unwanted plants in the field are called as ----- . The examples include ----

- a. Insecticide; DDT
- b. Weedicides; DDT
- c. Weedocodes; 2, 4 – D
- d. Insecticide; 2. 4 – D

6. ----- causes skin irritation and asthma.

- a. Parthenium
- b. Berries
- c. Poppy seeds
- d. Datura.

7. Aconite plants are concerned with the treatment of ----- , whereas Cinchona is for ----- .

- a. Malaria; Rheumatism
- b. Leprosy; Rheumatism
- c. Rheumatism; Malaria
- d. Rheumatism; Leprosy.

8. ----- is the art of growing and managing honey bees for economic values.

- a. Pisciculture
- b. Sericulture
- c. Apiculture
- d. Aquaculture

9. ----- are milch animals whereas ----- are draught animals.

- a. Siri cows; Sindhi red cows
- b. Sindhi red cows; Siri cows
- c. Siri cows; Sahiwal cows
- d. Sahiwal cows; Siri cows

10. ----- is called as the scientist's puzzle because they can neither be classified as living things, nor non-living things.

- a. Bacteria
- b. Virus

c. Protozoa

d. Fungus.

11. Till date, no effective vaccines are available to treat -----

a. Malaria

b. Hepatitis B

c. Small pox

d. Measles.

12. Which of the following is not a way to conserve forests?

a. Reforestation

b. Deforestation

c. Planned cultivation

d. Prevention of illegal logging

SMART INDIA TALENT EXAMINATION-2011

Std: VIII

MATHEMATICS

Marks: 60marks

Time : 60 min.

Choose the correct answer from the given four alternatives.

1) Rational numbers are not closed under

- (a) *addition* (b) *subtraction*
(c) *multiplication* (d) *Division*

2) Multiplicative inverse of a negative rational number is

- (a) *a positive rational number*
(b) *a negative rational number*
(c) *neither positive or negative*
(d) *none of these*

3) The value of $4 - \frac{5}{1 + \frac{1}{3 + \frac{1}{2 + \frac{1}{4}}}}$ is

- (a) $\frac{40}{31}$ (b) $\frac{4}{9}$ (c) $\frac{1}{8}$ (d) $\frac{31}{40}$

4) If $x = -\frac{2}{7}$ then $|-x|$ is equal to

- (a) $\frac{2}{7}$ (b) $-\frac{2}{7}$ (c) 0 (d) 1

5) The Value of x for which two rational numbers $\frac{3}{7}, \frac{x}{42}$ are equivalent

is

- (a) 18 (b) 15 (c) 12 (d) 10

6) If the digit in the unit's place of a number is 8, then the digit in the units place of its cube root will be

- (a) 2 (b) 8 (c) 4 (d) 6

7) By what number should we divide 40 to make it a perfect cube?

- (a) 5 (b) 4 (c) 10 (d) 20

8) The square root of 0.0144 is

- (a) 1.2 (b) 1.44 (c) 0.12 (d) 0.012

9. $\left[\left((625)^{\frac{-1}{2}} \right)^{\frac{-1}{4}} \right]^2$ is

- (a) 4 (b) 5 (c) 2 (d) 3

10) If $a = b^{2x}, b = c^{2y}, c = a^{2z}$ then xyz is

- (a) 2^{-2} (b) 2^{-3} (c) 2^2 (d) 2^3

11) If $1234 * 72$ is divisible by 11 then * equal to

- (a) 7 (b) 8 (c) 5 (d) 0

12) If $(7\Delta 3) \oplus 1 = 10$ then $(8\Delta 2) \oplus 2$ is equal to

- (a) 20 (b) 16 (c) 10 (d) 40

13) If $(a * b) * c = a + b + 2$ then $(3 * 2) * 4$ is

- (a) 10 (b) 13 (c) 5 (d) 17

14) Which expression is a factor of $m^3 - 8$ is

- (a) $m - 8$ (b) $m + 8$ (c) $m - 2$ (d) $m + 2$

15) $(6x^2 - 4x + 5) - (3x^2 - 2x - 3)$ is equal to

- (a) $x^2 - 6x + 2$ (b) $3x^2 - 2x + 8$
(c) $4x^2 + 6x - 8$ (d) $x^2 + x - 2$

16) The H. C. F. of $10a^2b^2, -5a^3b^2, 15a^8b^4$ is

- (a) $-30a^8b^4$ (b) $5a^8b^4$ (c) $5a^2b^2$ (d) $-5a^2b^2$

17) A shirt marked Rs. 500 is sold for Rs. 400 so % of discount is

- (a) 10 (b) 20 (c) 5 (d) 25

23) A cube can also be called a

- (a) *rectangular prism* (b) *triangular prism*
(c) *square prism* (d) *triangular prism*

24) If we double the length of a square then its area will increase to

- (a) *double times* (b) *four times*
(c) *three times* (d) *none of these*

25) The circumferences of two concentric circles are 176 cm and 132cm respectively. The difference of their radii is

- (a) *5cm* (b) *7cm* (c) *8cm* (d) *44cm*

26) How many 1 cm cubes can be fitted onto a cuboidal box with sides 10cm, 8cm and 6cm is

- (a) *48 cubes* (b) *480 cubes* (c) *80 cubes* (d) *86 cubes*

27) If the length of a rectangle increases by 10% and the breadth is decreases by 12% then % of change in area is

- (a) *no change* (b) *3.2%* (c) *5%* (d) *10%*

28) The value of m , if $\frac{(3m+2)}{4} = 8$ is

- (a) 10 (b) 32 (c) 30 (d) 5

29) Sum of two numbers is 50. If one number is smaller than the other number by 6 then the two numbers are

- (a) 28 and 22 (b) 45 and 5 (c) 30 and 20 (d) 24 and 26

30) If the angles of a triangle are in the ration 1: 2: 3, then the triangle is _____ triangle.

- (a) *obtuse* (b) *Isosceles* (c) *Equilateral* (d) *Right angled*

31) Quadratic equations have the power of variables as

- (a) 1 (b) 0 (c) 2 (d) 3

32) The sum of 3 consecutive odd numbers is 45, and then the numbers are

- (a) 13, 15, 17 (b) 11, 13, 15 (c) 9, 11, 13 (d) 15, 17, 19

33) The number of times on observation occurs in a data is called its _____

- (a) range (b) frequency (c) raw data (d) interval

34) The probability of drawing a queen card from a pack of 52 cards is

- (a) $\frac{1}{52}$ (b) $\frac{1}{26}$ (c) $\frac{1}{13}$ (d) $\frac{1}{4}$

35) The coordinates of origin are

- (a) (0,1) (b) (1,1) (c) (0,0) (d) (1,0)

36) Point $P(2, 9)$, $Q(2, 12)$, $R(2, 15)$ lie on a line which of the following lie on the same line

- (a) (5,2) (b) (2,10) (c) (14,2) (d) (3,9)

37) Which of the following points lie on the $y - axis$

- (a) (7,0) (b) (3,2) (c) (0,9) (d) (7,9)

38) A die is rolled, the probability of getting a number more than 4 is

- (a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{1}{6}$

39) The value of $\frac{a^3+b^3+c^3-3abc}{ab+bc+ca-a^2-b^2-c^2}$ when $a = -5$, $b = -6$, $c = 10$ is

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

40) The L. C. M. of $x^2 - 8$ and $x^2 - 5x + 6$ is

(a) $x - 2$

(b) $x^2 + 2x + 4$

(c) $(x - 2)(x^2 + 2x + 4)$

(d) $(x - 2)(x - 3)(x^2 + 2x + 4)$

Fill in the blanks

41) _____ does not have a reciprocal.

42) If a number has one place of decimal, its cube will have _____ places of decimals.

43) If 5 times a number increase by 4 is 39 then the number is _____.

44) A car is travelling at a speed of 54 km/hr covers a distance in 2.5hrs. At a speed of 45km/hr, it covers the same distance in _____ hours.

45) The volume of a cube of side 6.2cm is _____.

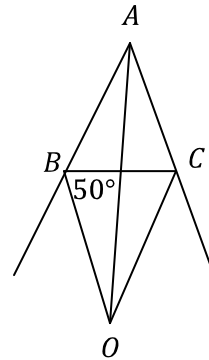
46) All coordinates with _____ as zero lie on x-axis

47) The identity which can be used to evaluate 108×92 is _____

48) A box contains 25 blue balls, 15 red balls, the probability of getting a blue ball is _____.

49) $-8y - (y - 5) = -13$ then y is _____.

50) In the diagram given below BO and CO bisect the exterior angles B and C. AO is joined, then $\angle x$ is _____



Say True or False

51) Additive inverse of $\frac{a}{b}$ is $-\frac{a}{b}$

52) Zero is less than all negative rational numbers.

53) If a and b are positive integers such that $a^2 > b^2$ then $a^3 < b^3$

54) The value of $[(-1)^{-3}]^5 \times 5^0$ is -1 .

55) $16m^2 + 24m + 9$ is equal to $(4m + 3)^2$

56) Profit or loss is calculated on selling price.

57) Area of cultivated land and the crop harvested are inverse proportion.

58) Every trapezium is a parallelogram.

59) In the class interval 70 – 80; 80 is the range.

60) The independent variable is generally shown along $x - axis$
