1. Which of the following does not increase the rate of evaporation?

A. Increase of temperature
B. Increase in wind speed
C. Increase in surface area
D. Increase in humidity

2. Ice floats on the surface of water because

A. It is heavier than water
B. The density of both water and ice is the same
C. Ice is lighter than water
D. None of the above

3. If the temperature of a place is increase then evaporation

A. decrease
B. increase
C. remain same
D. none of the above

4. Benzene and water can be separated by

A. Separating funnel
B. Sublimation
C. Fractional distillation
D. Filtration

5. Blood and sea water are

A. both mixtures
B. both are compound
C. blood is a mixture whereas sea water is a compound
D. blood is a compound and sea water is a mixture

6. A solution contains 50 ml of ethyl alcohol mixed with 150 ml of water. Calculate the concentration of solution

A. 25%
B. 50%
C. 75%
D. 60%

7. The number of molecules contained in 2 g of H_2 is the same as the number of atoms in

A. 1 $_g$ of H_2
B. 2 g of H_2
C. 71 $_g$ of Cl_2
D. 27 $_g$ of N_2

8. What weight of oxygen gas will contain the same number of molecules as 56 g of nitrogen gas?

A. 64g
B. 32g
C. 56g
D. 28g

9. The formula of the compound denitrogen trioxide is represented by

A. $2NO_3$
B. $2N_3O$
C. N_2O_3
D. N_3O_2

10. Which of the following is not correct observation/conclusion from Rutherford's scattering experiment?

A. Nucleus is small but heavy
B. Nucleus always carries positive charge
C. Atom is nearly 10^5 times greater than the size of the nucleus
D. The number of o-particles hitting the nucleus is very large

11. The charge of proton (p^+) is

A. $+1.6 \times 10^{-9}C$
B. $-1.6 \times 10^{-9}C$
C. $+1.6 \times 10^9C$
D. -1.6×10^9C

12. Atomic Number of an element is equal to

A. Number of Protons
B. Number of electrons
C. Number of neutrons
D. Both a) and b)

13. The cell walls of the adjacent cells are joined together by a jelly like substance made up of calcium and magnesium pectate. This is called

A. Microfibril
B. Middle lamella
C. Plasmodesmata
D. Plasmalemma

14. Which of the following differences between RER and SER is incorrect?

A. RER =It mainly consists of cisternae
SER = It consists mainly of tubules and vesicles
B. RER = It has ribosomes attached on its its cytoplasmic surface
SER = It is free of ribosomes
C. RER = It is well developed in cells specialized to synthesize lipids and steroids

SER = It is well developed in cells specialized to synthesize proteins
D. RER = The products pass into the lumen of endoplasmic reticulum for transport to other places
SER = The products do not pass into the lumen of endoplasmic reticulum

15. Which of the following statements is not true regarding prokaryotes?

A. They contain single chromosome
B. They lack a nuclear membrane
C. They are mainly multicellule
D. They lack membrane bound cell organelles

16. A long tubular outgrowth of a nerve cell which conducts impulses away from the cell body is termed as

A. cyton
B. axon
C. Neuron
D. dendrite

17. Which of the following statements regarding apical meristem is not true?

A. It brings about the elongation of the root and stem
B. It brings about secondary growth
C. It brings about primary growth
D. None of the above

18. The slow growing large coloured patches on the bark of trees which are result of symbiotic relationship between cyanobacteria and fungi are

A. Mosses
B. Lichens
C. Ferns
D. None of these

19. Which of the following structures are characteristics of reptiles but not of amphibians?

A. Scales
B. Lungs
C. Smooth moist skin
D. Vertebral Column

20. Which of the following statements is correct?

A. speed distance are scalar, velocity and displacement are vector
B. speed distance are vector, velocity and displacement are vector
C. speed and velocity are scalar, distance and velocity are vector
D. speed and velocity are vector, distance and displacement are scalar

21. Which of the following statements is correct?

A. both speed and velocity are same
B. speed is a scalar and velocity is a vector
C. speed is a vector and velocity is scalar
D. none of these

22. A particle of mass 0.3 kg is subjected to a force F = k x with k = 15 N/m and x being its distance from the origin. What will be its initial acceleration if it is released from a point 20 cm away from the origin?

A. 5 m/s^2
B. 10 rn/s^2
C. 3m/s^2
D. 15 m/s^2

23. A hockey player pushes the ball on the ground. It comes to rest after travelling certain distance because

A. The player stops pushing the ball
B. No balanced force acts on the ball
C. The ball moves only when pushed
D. The opposing force acts on the ball

24. Which of the statements is correct?

A. Mass is constant and weight is variable
B. Mass is variable and weight is constant
C. Both Mass and weight are variable
D. Both Mass and weight are constant

25. Units of 'g' are

A. m/s^2
B. N/Kg
C. Nm/s^2
D. Nms^2

26. A horse and a calf are running with the same speed. The kinetic energy of the calf will be

A. Greater than kinetic energy of the horse
B. Less than the kinetic energy of the horse
C. Equal to the kinetic energy of the horse
D. None of these

27. A body of mass 2 kg is thrown up vertically with a kinetic energy of 490 J. If the acceleration due to gravity is 9.8 ms^{-2}, the height at which the kinetic energy of the body becomes half of the original value is

A. 50m
B. 25m
C. 12.5m
D. 10 m

28. S. I. units of frequency are

A. second
B. second^{-}
C. (second)^2
D. decond^{-2}

29. Speed of sound is maximum in

A. Solids
B. Liquids
C. Gases
D. Plasma

30. Which one of the following is not important for individual health?

A. Living in clean space
B. Good economic condition
C. Social equality and harmony
D. Living in a large and well furnished house

31. AIDS is a disease caused by retrovirus, an RNA virus which brings about

A. Reduction in the number of helper T-cells
B. Reduction in the number of killer T-cells
C. Autoimmunity
D. Non production of interferons

32. Which of the following statements is not true regarding nitrogen fixation?

A. Nitrosomonas convert ammonia into nitrites
B. Nitrobacter converts nitrites into nitrates
C. Both the steps of (A) and (B) can be called nitrification
D. Bacteria carrying out these conversions are usually photoautotrophs

33. Water vapours changes into water droplets by

A. condensation
B. evaporation
C. sublimation
D. none

34. Select among the following, a highly contagious and fatal viral disease of cattle which is also called cattle plague

A. Anthrax
B. Haemorrhagic septicemia
C. Foot and mouth disease
D. Rinderpest

35. Which of the following pairs are correctly matched?

( ) Cerea crops	Sorghum
( ) Pu se crops	Lent
( ) O seed crops	Sesame
(v) Fodder crops	Castor

A. (i)&(ii)
B. (ii) & (iv)
C. (i), (ii) & (iii)
D. (iii) & (iv)

36. Apple juice concentrate is mixed with water to make apple juice. Which of the following final mixtures has the highest percentage of apple juice concentrate?

A. 400 ml apple juice concentrate mixed with 600 ml water
B. 300 ml apple juice concentrate mixed with 600 ml water
C. 300 ml apple juice concentrate mixed with 400 ml water
D. 400 ml apple juice concentrate mixed with 400 ml water

37. Which set of numbers contain $\sqrt{5}$?

A. Natural numbers
B. Rational numbers
C. Integers
D. Irrational numbers

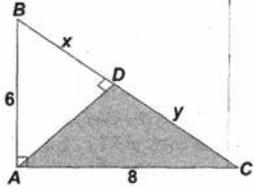**38.** Which number is a perfect square?

A. 25
B. 52
C. 2
D. 5

39. If a cylindrical cup contains water equal to $\frac{1}{8}^{th}$ of its whole volume, then the ratio of the height the cup to the depth of the water is _____

A. 8: 1
B. 6: 1
C. 4: 1
D. 2: 1

40. If $\dfrac{\left(2^{n\ 1}\right)^{m}\left(2^{2}\right)^{n}2^{n}}{\left(2^{m\ 1}\right)^{n}2^{2m}}$,1 *then m*

A. 0
B. 1
C. -1

D. 2n

41. In the adjoining right-angled triangle ABC, find the value of x and

A. x = 3.2cm;y = 2.8cm
B. x = 2.8 cm; y = 3.2 cm
C. x = 6.4 cm; y = 2.8 cm
D. x = 3.6 cm; y = 6.4 cm

42. Referring to the adjoining figure, one can find the breadth of the river without crossing it, by using the hint given below:
Hint: Let AB be the breadth of the river. Mark any point M on the bank on which B is situated. Let O be the mid-point of BM. From M move along the path MN
perpendicular to BM to a point N such that A, O, N are in the same straight line. Then, MN is the required breadth of the river. Proof may be given by proving that $\triangle OBA \cong \triangle AOMN$. Is the above hint correct?
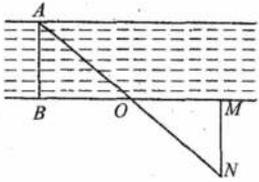
A. Yes
B. No
C. Can't say
D. Hint is incomplete

43. Which is an equation of the line with slope $\frac{2}{3}$ that passes through the point (4,-1)?

A. $y \quad \frac{1}{4}x \quad \frac{2}{3}$

B. $y \quad 4x \quad \frac{2}{3}$

C. $y \quad \frac{2}{3}x \quad \frac{5}{3}$

D. $y \quad \frac{2}{3}x \quad \frac{11}{3}$

44. Income of a company doubles after every one year. If the initial income was Rs. 4 lakhs, what would be the income after 5 years?

A. Rs. 1.24 crores
B. Rs. 1.28 crores

C. Rs. 2.56 crores

D. None of these

45. Eight people are planning to share equally the cost of a rental car. If one person withdraws from the arrangement and the others share equally the entire rental of the car, then the share of each of the remaining persons increased by

A. 1/9

B. 1/8

C. 1/7

D. 7/8

46. One card is drawn from a pack of 52 cards. What is the probability that the card drawn is a red card?

A. $\dfrac{1}{2}$

B. $\dfrac{6}{13}$

C. $\dfrac{1}{13}$

D. $\dfrac{27}{52}$

47. A cube of side 6 cm is painted on all its 6 faces with red colour. It is then broken up into 216 smaller identical cubes. What is the ratio of N_0: N : N_2.

Where, N_0 ? number of smaller cubes with no coloured surface

N ? number of smaller cubes with I red face

N_2 ? number of smaller cubes with 2 red faces

A. 3:4:6

B. 3:4:5

C. 4:6:3

D. Can't be determined

48. What is the simplified form $\dfrac{a^4 b^2 c}{a^3 b^5 c^2}$?

A. $ab^3 C^2$

B. $\dfrac{a}{b^3 c^3}$

C. $a^7 b^7 c^3$

D. $\dfrac{a}{b^3 c}$

49. Simplify $\dfrac{12}{3\ \sqrt{5}\ 2\sqrt{2}}$

A. $1 - \sqrt{5} \quad \sqrt{2} \quad \sqrt{10}$

B. $1 \quad \sqrt{5} \quad \sqrt{2} \quad \sqrt{10}$

C. $1 \quad \sqrt{5} \quad \sqrt{2} \quad \sqrt{10}$

D. $1 - \sqrt{5} \quad \sqrt{2} \quad \sqrt{10}$

50. Simplify $\left(\dfrac{x^a}{x^b}\right)^{(a\ b)} \left(\dfrac{x^b}{x^c}\right)^{(b\ c)} \left(\dfrac{x^c}{x^a}\right)^{(c\ a)}$

A. 0

B. x^{abc}

C. x^{a+b+c}

D. 1