Sample Question Paper

1. Which of the following is not matter?

(A) Fog
(B) Humid air
(C) Melting point
(D) Blood
(E) None of these

2. Which of the following does not increases the rate of evaporation?

(A) Increase of temperature
(B) Increase in wind speed
(C) Increase in surface area
(D) Increase in humidity.
(E) None of these

3. Which of the following is not a characteristic of solids?

(A) High rigidity
(B) High fluidity
(C) Low compressibility
(D) High density.
(E) None of these

4. Naphthalene balls disappear without leaving any residue. This phenomenon is known as

(A) Sublimation
(B) Evaporation
(C) Diffusion
(D) Condensation
(E) None of these

5. When sodium hydroxide is added to ferric chloride solution, a reddish brown precipitate is formed. The precipitate is separated from the mixture by the process of

(A) Evaporation
(B) Sublimation
(C) Filtration
(D) Fractional distillation
(E) None of these

6. Which of the following will show Tyndall effect?

(A) Salt solution
(B) Copper sulphate solution
(C) Sugar solution
(D) Milk
(E) None of these

7. Ammonium chloride is separated from a mixture of sodium chloride and ammonium chloride by the process of

(A) Evaporation
(B) Sublimation
(C) Fractional
(D) Fractional distillation
(E) None of these

8. Greasy spots can be removed from clothes by

(A) Evaporation
(B) Sublimation
(C) Fractional distillation
(D) Dissolving in a suitable solvent
(E) None of these

9. Calculate the percentage of Fe in $Fe_2(CO_3)_2$.

(A) 48.28 %
(B) 51.72 %
(C) 28.06 %
(D) 21.06 %
(E) None of these

10. Find the number of moles in 12.026×10^{23} atoms of He.

(A) 1
(B) 2
(C) 3
(D) 4
(E) None of these

11. The chemical name for $Na_2S_2O_3$ is :

(A) Sodium sulphate
(B) Sodium sulphurous oxide
(C) Sodium bi sulphate
(D) Sodium thiosulphate
(E) None of these

12. The molecular mass of K_2CO_3 is :

(A) 128 amu
(B) 112 amu
(C) 138 amu
(D) 122 amu
(E) None of these

13. Who discovered nucleus of an atom?

(A) Thomsons
(B) Goldenstine
(C) Rutherford
(D) Chadwick
(E) None of these

14. The isobar of $^{6}C_{14}$ is :

(A) $^{7}N_{14}$
(B) $^{8}O_{14}$
(C) $^{6}C_{12}$
(D) All of these
(E) None of these

15. The relative mass of electron is:

(A) + 1 (B) – 1

(C) 0 (D) $\frac{1}{1840}$

(E) None of these

16. Which fundamental particles is not present in the normal hydrogen?

(A) Electron (B) Proton

(C) Neutron (D) All of these

(E) None of these

17. What happens to collagen when boiled in water at normal pressure and temperature?

(A) Changes into Gelatin (B) Changes into Elastin

(C) Changes into Fibrine (D) No changes

(E) None of these

18. Who proposed the fluid mosaic model of protoplasm?

(A) Singer and Nicolson (B) Watson and Crick

(C) Robert Hook (D) Robert Brown

(E) None of these

19. The white fibres of connective tissue is made up of which one of the following?

(A) Lignin (B) Keratin

(C) Elastin (D) Collagen

(E) None of these

20. Two sister chromatids of a chromosomes are attached with:

(A) Gene (B) Chromatin

(C) Nucleus (D) Centromere

(E) None of these

21. These animals are cold-blooded, have scales and breathe through lungs. They have four-chambered heart. They lay eggs with tough covering and o dot need to lay their eggs in water.
Which of the following animals is referred to in the above paragraph?

(A) Chameleon (B) Lizard

(C) Crocodile (D) Tortoise

(E) None of these

22. Which of the following features about chordates is not true?

(A) They have a notochord
(B) They have paired gill pouches
(C) They are acoelomate
(D) They are triploblastic
(E) None of these

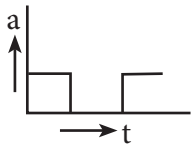
23. A kingdom in which reserve food in glycogen and the cell wall is made up of chitin is

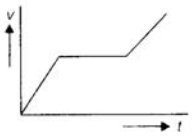
(A) Protista
(B) Fungi
(C) Plantae
(D) Monera
(E) None of these

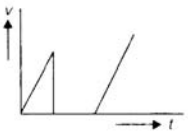
24. The animals in which the cells are properly arranged into tissues and organs are

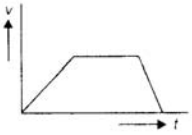
(A) Parazoa
(B) Emuetazoa
(C) Plectozoa
(D) Both A & B
(E) None of these

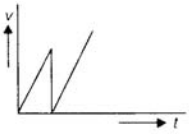
25. Which of the following would probably show the velocity-time graph for a body whose acceleration-time graph is shown in figure?



(A) 

(B) 

(C) 

(D) 

(E) None of these

26. A body thrown vertically up with a velocity u reaches the maximum height h after T second. Correct statement among the following is

(A) At a height $h/2$ from the ground its velocity is $u/2$
(B) At a time T its velocity is u
(C) At a time $2T$ its velocity is $-u$
(D) At a time $2T$ its velocity is $-6u$
(E) None of these

27. Two racing cars of masses m_1, and m_2 are moving in circles of radii, r_1 and r_2 respectively. Their speeds are such that each makes a complete circle in the same length of time t. The ratio of angular speed of the first car to that of the second car as

(A) $m_1 : m_2$
(B) $r_1 : r_2$
(C) $1 : 1$
(D) $m_1 r_1 : m_2 r_2$
(E) None of these

28. The speed of a train increases at a constant rate α from zero to v, and then remains constant for an interval, and finally decreases to zero at a constant rate β. If L be the total distance travelled, then the total time taken is

(A) $\frac{L}{v}+\frac{v}{2}\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)$
(B) $\frac{L}{v}+\frac{2}{v}\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)$
(C) $\frac{L}{v}+2v\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)$
(D) $\frac{L}{v}+\frac{1}{v}\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)$
(E) None of these

29. A body of mass 'm' kg starts form rest and travels a distance of 's' m in 't' seconds. The force acting on it is

(A) $\frac{2ms}{t^2}$ N
(B) $\frac{ms}{t}$ N
(C) $\frac{ms^2}{2t}$ N
(D) $\frac{ms^2}{t}$ N
(E) None of these

30. The distance X covered in time t by a body having velocity v_0 and having a constant acceleration a is given by $x = v_0 t + \frac{1}{2}at^2$. This result follows from

(A) Newton's first law
(B) Newton's second law
(C) Newton's third law
(D) Both A & B
(E) None of these

31. During a football match, the ball shot towards the goal struck the defender's foot at the speed of 10 m/s and it bounced back at 20 m/s. If the time of impact was 0.2 sec, and mass of the ball ½ kg, then average force exerted by defender on the ball is

(A) 75 N
(B) 35 N
(C) 50 N
(D) 40 N
(E) None of these

32. When a ball is thrown upwards its acceleration due to gravity is:

(A) Positive
(B) Negative
(C) Increases
(D) All of these
(E) None of these

33. Find the acceleration due to gravity at a height of 3200 km above the surface of earth.

(A) 4.36 m/s^2
(B) 3.56 m/s^2
(C) 2.45 m/s^2
(D) 6.25 m/s^2
(E) None of these

34. The value of G on the surface of Jupiter is:

(A) $6.67 \times 10^{-11}\ Nm^2/kg^2$
(B) $6.67 \times 10^{-10}\ Nm^2/kg^2$
(C) $6.67 \times 10^{-12}\ Nm^2/kg^2$
(D) $6.67 \times 10^{-13}\ Nm^2/kg^2$
(E) None of these

35. The centripetal force given by Newton's second law is:

(A) $\frac{mv^2}{r}$
(B) $\frac{mv}{r}$
(C) $\frac{mv}{r^2}$
(D) $\frac{2mv}{r^2}$
(E) None of these

36. In the Sl system, the unit of P.E. is:

(A) Erg
(B) Newton
(C) Dyne
(D) Joule
(E) None of these

37. In which one of the following situation the potential energy of the spring will be minimum?

(A) Compressed
(B) Extended
(C) In its original shape
(D) Neither
(E) None of these

38. When a stone is thrown upward with a certain speed then its kinetic energy at the highest point is:

(A) Maximum
(B) Minimum
(C) Insufficient data
(D) Zero
(E) None of these

39. An electric bulb of 100 watt is used for 8 hour daily. Find the energy consumption in the month of March.

(A) 24.8 kwh
(B) 0.248 kwh
(C) 2.48 kwh
(D) 248 kwh
(E) None of these

40. The volumes of two cylinders are as $a : b$, and their heights are as $c : d$. Find the ratio of their diameters.

(A) $\frac{ad}{bc}$
(B) $\frac{ad^2}{bc^2}$
(C) $\sqrt{\frac{ad}{bc}}$
(D) $\sqrt{\frac{a}{b}+\frac{c}{d}}$
(E) None of these

41. Which of the following factors are responsible for the change in state of solid carbon dioxide when kept exposed into air?

(A) Increase in pressure
(B) Decrease in pressure
(C) Decrease in volume
(D) Decrease in temperature.
(E) None of these

42. The boiling points of some gases found in air are given below.

Name	Krypton	Neon	Nitrogen	Oxygen
Boiling point °C	–152	–246	–196	–183

If liquid mixture is fractionally distilled, the order of gases distilling out is

(A) Krypton, neon, nitrogen, oxygen
(B) Neon, nitrogen, oxygen, krypton
(C) Nitrogen, neon, oxygen, krypton
(D) Oxygen, neon, nitrogen, krypton.
(E) None of these

43. The chemical name for $Na_2S_2O_3$ is :

(A) Sodium sulphate
(B) Sodium sulphurous oxide
(C) Sodium bi sulphate
(D) Sodium thiosulphate
(E) None of these

44. Which is not true about neutron?

(A) It is a neutral particle
(B) It is present in the nucleus of the atom.
(C) It is highly unstable in nature.
(D) It contributes to the mass of the atom.
(E) None of these

45. 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 multicellular
(D) The lack membrane bound cell organelles.
(E) None of these

46. Which of the following pairs is/are incorrectly matched?

(i) Linnaeus – Four kingdom system of classification
(ii) Whittaker – Four kingdom system of classification
(iii) Woese - Two kingdom system of classification
(iv) Haeckel - Three kingdom system of classification

(A) (iii) & (iv)
(B) (i) & (iii)
(C) (i) & (ii)
(D) (i) only
(E) None of these

47. The train 'A' traveled a distance of 120 km in 1.5 hours whereas another train 'B' traveled a distance of 180 km in 4 hours. Which train traveled faster?

(A) 'A' is faster than 'B'
(B) 'B' is faster than 'A'
(C) Both 'A' and 'B' have same speed
(D) Insufficient data
(E) None of these

48. A person is standing in an elevator. The situation in which he finds his weight less than actual, is when?

(A) The elevator moves upward with constant acceleration
(B) The elevator moves downward with constant acceleration
(C) The elevator moves upward with uniform velocity
(D) The elevator moves downward with uniform velocity
(E) None of these

49. The value of G on the surface of Jupiter is:

(A) 6.67×10^{-11} Nm^2/kg^2
(B) 6.67×10^{-10} Nm^2/kg^2
(C) 6.67×10^{-12} Nm^2/kg^2
(D) 6.67×10^{-13} Nm^2/kg^2
(E) None of these

50. 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 m s^{-2}, the height at which the kinetic energy of the body becomes half of the original value is

(A) 50 m
(B) 25 m
(C) 12.5 m
(D) 10 m
(E) None of these

Note: The actual Question Paper will translated in Hindi at the time of exam.

Darken your choice with HB Pencil															
1	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	14	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	27	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	40	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	15	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	28	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	41	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	16	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	29	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	42	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	17	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	30	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	43	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	18	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	31	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	44	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
6	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	19	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	32	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	45	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
7	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	20	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	33	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	46	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
8	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	21	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	34	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	47	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
9	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	22	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	35	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	48	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
10	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	23	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	36	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	49	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	24	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	37	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	50	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
12	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	25	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	38	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ						
13	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	26	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	39	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ						