

- Q.1. Matter waves are
 (a) mechanical waves
 (b) electromagnetic waves
 (c) quantum mechanical waves
 (d) none of these
- Q.2. Bernoulli's theorem is based upon
 (a) conservation of energy
 (b) conservation of charge
 (c) conservation of momentum
 (d) none of these
- Q.3. Dimensional formula for force is
 (a) MLT^{-2}
 (b) MLT^{-1}
 (c) MT^{-2}
 (d) ML
- Q.4. On decreasing the temperature of a liquid its rate of evaporation
 (a) increases
 (b) decreases
 (c) first increases and then decreases
 (d) remains unaffected
- Q.5. The resistance of a wire is R. If the length of the wire is doubled, then its resistance will be
 (a) 2R
 (b) 4R
 (c) 8R
 (d) 16R
- Q.6. Diamagnetism exist in the substances on account of
 (a) paired electrons
 (b) unpaired electrons
 (c) presence of protons
 (d) presence of domains
- Q.7. Of the following cases, velocity of sound at 30° will be least through
 (a) N_2
 (b) O_2
 (c) SO_2
 (d) CO_2
- Q.8. In an isochoric process
 (a) temperature remains constant
 (b) pressure remains constant
 (c) volume remains constant
 (d) no exchange of heat takes place
- Q.9. Temperature of two bodies are T_1 and T_2 . If they are in thermal equilibrium then
 (a) $T_1 > T_2$
 (b) $T_1 > T_2$
 (c) $T_1 < T_2$
 (d) $T_1 = T_2$
- Q.10. If the elements of $n > 4$ were not exists in nature, then possible number of elements in nature were
 (a) 60
 (b) 32
 (c) 4
 (d) 64
- Q.11. Bohr's Quantum condition is(where $I\omega$ is moment of inertia and ω is angular velocity)
 (a) $I\omega = 2\pi/nh$
 (b) $I\omega = nh/2\pi$
 (c) $I\omega^2 = nh/2\pi$
 (d) $I\omega = nh/4\pi$
- Q.12. N equal resistors are first connected in series and then connected in parallel. Ratio of maximum to the minimum resistance is
 (a) N
 (b) N^2
 (c) $1/N^2$
 (d) $1/N$
- Q.13. Which of the following is true in case of longitudinal stationary waves?
 (a) variation in pressure and density is maximum at nodes
 (b) variation in pressure is maximum and variation in density is minimum at nodes
 (c) variation in pressure and density is minimum at nodes
 (d) variation in pressure is minimum and variation in density is maximum at Nodes
- Q.14. Two tuning forks have the frequencies 512 Hz and 516 Hz. Number of beats produced by these forks per second will be
 (a) 1028
 (b) 4
 (c) $1/4$
 (d) $1/1028$
- Q.15. For the production of x-rays of wavelength 0.1 Å, the minimum potential difference will be
 (a) 12.4 KV
 (b) 124 KV
 (c) 6.2 KV
 (d) 62 KV
- Q.16. Two cards are drawn at random from a pack of 52 cards. The probability of getting at least a spade and an ace is

- (a) $1/34$
- (b) $8/221$
- (c) $1/26$
- (d) $2/51$

Q.17. The number of 6 digit numbers that can be made with the digits 0, 1, 2, 3, 4 and 5, so that even digit occupy odd places is

- (a) 24
- (b) 36
- (c) 48
- (d) None of these

Q.18. The number of values of a for which $(a^2-3a+2)x^2+(a^2-5a+6)x+a^2-4=0$ is an identity in x is

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

Q.19. Set A has 3 elements and set B has 4 elements. The number of injections that can be defined from A to B is

- (a) 144
- (b) 12
- (c) 64
- (d) 24

Q.20. The value of $\cos 15^\circ$ is equal to

- (a) $[(\sqrt{3}+1)/2\sqrt{2}]$
- (b) $[(\sqrt{3}-1)/2\sqrt{2}]$
- (c) $2-\sqrt{3}$
- (d) $2+\sqrt{3}$

Q.21. In a right angled ABC , $a=2$, $b=1+\sqrt{3}$, $\angle C=60^\circ$ then the side c is equal to :

- (a) $\sqrt{3}-1$
- (b) $\sqrt{2}+1$
- (c) $\sqrt{}$
- (D) None of these

Q.22. If in a triangle PQR , $\sin P$, $\sin Q$, $\sin R$ are in A.P. Then :

- (a) the altitudes are in A.P.
- (b) the altitudes are in H.P.
- (c) the medians are in G.P.
- (d) the medians are in A.P.

Q.23. The line segment joining the points $(-3, -4)$ and $(1, -2)$ is divided by y-axis in the ratio

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

Q.24. Which of the following is the equation of a plane?

- (a) $1x+my=n$
- (b) $z=0$
- (c) $2x+3y=0$
- (d) $y=-x$

Q.25. The eccentricity of the ellipse

- $9x^2+5y^2-30y=0$ is
- (a) $1/3$
 - (b) $2/3$
 - (c) $3/4$
 - (d) None of these

Q.26. The function $f(x)=1/x$ on its domain is

- (a) increasing
- (b) decreasing
- (c) constant
- (d) information insufficient

Q.27. The maximum value of xy subject to $x+y=8$ is

- (a) 8
- (b) 16
- (c) 20
- (d) 24

Q.28. The measure which takes into account all the data items is

- (a) Mean
- (b) Median
- (c) Mode
- (d) None of these

Q.29. The sum of all odd proper divisors of 360 is

- (a) 77
- (b) 78
- (c) 81
- (d) None of these

Q.30. The scores of a batsman in ten innings are 38, 70, 48, 34, 42, 55, 63, 46, 54, 44. The mean deviation about the median is

- (a) 9.2
- (b) 8.6
- (c) 7.4
- (d) 6.6

Q.31. Choose the appropriate Antonym of '**Sympathy**'

- (a) Enmity
- (b) Cruelty
- (c) Abhorrence
- (d) Apathy

Q.32. Choose the appropriate Antonym of '**Host**'

- (a) Arranger
- (b) Visitor

- (c) Manager
- (d) Entertainer
- Q.33. Choose the appropriate Synonym of '**ABASH**'
- (A) Strike
- (b) Deduct
- (c) Forsake
- (d) Confound
- Q.34. Choose the appropriate Synonym of '**Ghastly**'
- (a) Terrible
- (b) Pleasant
- (c) Pretty
- (d) Sanction
- Q.35. Choose the letter of the correctly spelt word.
- (a) pernicious
- (b) parnicious
- (c) pernishes
- (d) perneicious
- Q.36. Choose the letter of the correctly spelt word.
- (a) marrygible
- (b) marriageable
- (c) marriagable
- (d) marriageble
- Q.37. Choose the most suitable **One Word-** '**A workman who fits and repairs pipes**'
- (a) Mechanic
- (b) Blacksmith
- (c) Plumber
- (d) Technocrat
- Q.38. Choose the most suitable **One Word-** '**Study of books in regard to their outward form, authors, subjects, editions, etc.**'
- (a) autobiography
- (b) biography
- (c) bibliography
- (d) philately
- Q.39. Fill in the blank selecting correct **Preposition** from the alternatives given below sentence - **He aspires the post of a professor.**
- (a) about
- (b) for
- (c) to
- (d) on
- Q.40. Fill in the blank selecting correct **Preposition** from the alternatives given below sentence - **'I am fond vegetables.'**

- (a) into
- (b) since
- (c) of
- (d) for
- Q.41. Fill in the blank with a suitable **Article** '**The man is social animal.**'
- (a) a
- (b) an
- (c) the
- (d) None of these
- Q.42. Fill in the blank with a suitable **Article** '**Mohan gave me useful book.**'
- (a) a
- (b) an
- (c) the
- (d) None of these
- Q.43. Fill in the blank with a suitable **Article:** '**Cold on Himalayas is terrible.**'
- (a) a
- (b) an
- (c) the
- (d) None of these
- Q.44. **Fill in the blank:** Vaccination will make people immune _____ certain diseases for a _____ given period.
- (a) against
- (b) to
- (c) with
- (d) for
- Q.45. Complete the sentence: **All of us should abide _____ the laws of our country.**
- (a) on
- (b) to
- (c) by
- (d) in