

F. Y. B.Sc. (Sem. I):-Physics Paper I
Multiple Choice Questions

1. Impulse is product of -----
a) Force & mass b) Mass & acceleration
c) Force & time d) Force & displacement
2. The coefficient of static friction in terms of normal reaction N and limiting force of friction f acting on a mass m is given by
a) $\frac{N}{f}$ b) $\frac{f}{N}$ c) $f \times N$ d) $\sqrt{f \times N}$
3. A person standing in an ascending elevator feels
a) increase in his weight b) decrease in his weight
c) first increase then decrease in his weight d) no change in his weight
4. A body mass 1 Kg is acted by a constant force of 10 N. The acceleration in the body is
a) 0.1m/s^2 b) 1m/s^2 c) 10m/s^2 d) 100m/s^2
5. The normal reaction exerted by the surface of a incline plane of inclination θ on a mass M resting on it is
a) $Mg \cos\theta$ b) $Mg \sin\theta$ c) $Mg \tan\theta$ d) Mg .
6. If elongation force is applied across the length of the cylinder, the diameter of the cylinder will -----
a) Increase b) Decrease c) No Change d) Cannot Predict
7. Modulus of rigidity is shown by -----
a) liquids b) gases c) solids d) none of the above
8. Bulk modulus is the ratio of change in volume to -----
a) Original length b) original volume c) shear d) all of the above
9. Which of the following material is highly elastic
a) rubber b) steel c) plastic d) none of these
10. The modulus of elasticity is dimensionally equivalent to
(a) Strain (b) Stress (c) Surface tension (d) Poisson's ratio
11. Shearing strain is given by
a) Deforming force b) Shape of shear c) Angle of shear d) Change in volume of the body
12. Which of the following is dimensionless quantity?
(a) Stress (b) Young's modulus
(c) Strain (d) Pressure

13. Out of the following materials, whose elasticity is independent of temperature?
 (a) Copper (b) Invar steel (c) Brass (d) Silver
14. Strain has -----
 a) No units but only dimensions b) Only units but no dimension
 c) No units, no dimensions but a constant value
 d) No units, no dimensions but a variable value
15. The change in the shape of a regular body is due to
 (a) Bulk strain (b) Shearing strain
 (c) Longitudinal strain (d) Volume strain
16. When impurities are added to an elastic substance, its elasticity
 a) Increases b) Decreases c) Becomes zero d) May increase or decrease
17. Hooke's law essentially defines -----
 a) Stress (b) Strain (c) Yield point (d) Elastic limit
18. In the equation of continuity area of cross section of pipe is inversely proportional to ___
 a) volume of the fluid b) velocity of the fluid
 c) Pressure of the fluid d) density of the fluid
19. Airplane's dynamic lift is based on
 a) Bernoulli's principle b) Fermat's principle
 c) Archimedes principle d) Pascal's law
20. Bernoulli found that within the same fluid, high speed flow is associated with _____
 a) low pressure b) High pressure c) No Change in pressure
 d) Both low pressure and high pressure created
21. If a person studies about a fluid which is at rest, what will you call his domain of study?
 a) Fluid Mechanics b) Fluid Statics c) Fluid Kinematics d) Fluid Dynamics
22. Shear stress is caused due to _____
 a) Friction b) Temperature c) Pressure d) Volume
23. Newtonian fluid is defined as the fluid which
 a) Obeys Hook's law b) Is compressible c) Obeys Newton's law of viscosity
 d) Is incompressible
24. For achromatic combination of two lenses of equal focal length f , the separation between them should be -----
 a) f b) $2f$ c) zero d) $f/2$
25. The equivalent focal length of coaxial combination of two convex lenses of focal lengths f and $2f$ separated by a distance of f is
 a) f b) $2f$ c) $3f$ d) $f/2$

26. If the focal length of Huygen's Eyepiece is 18cm then focal length of field lens is -----
 a)12cm b)24cm c)36cm d)72cm
27. In projectors which lenses are used?
 (a) Convex lens (b) Concave lens
 (c) Bipolar lens (d) Both (a) and (b)
28. For Huygens eyepiece which is false statement
 a)Curved surfaces facing the front direction
 b)distance between the field lens and eye lens is $2f$
 c)Field lens has larger focal length and the eye lens smaller
 d)field lens has smaller focal length and eye lens larger
29. Lens is made up of
 (a) pyrex glass (b) flint glass (c) ordinary glass (d) cobalt glass
30. Which glasses or lens are used to correct the short sighted eye defect?
 (a) Concave Lens (b) Convex Lens
 (c) Bipolar Lens (d) None of the above
31. A certain mass of dry air with $\gamma = 1.4$ at NTP is expanded to three times its volume under adiabatic conditions then the resulting pressure is
 a)0.215atm b) 1.215atm c)4.655atm d)0.655atm
32. Gases show more ideal behavior at -----
 a)High pressure b) Low pressure c) Low density d)Low temperature
33. Law which relates pressure and volume of a gas is -----
 a) Boyle's law b) Avogadro's law c) Charles Law d) ideal gas law
34. Amount of the work done in pulling the molecules apart measures the
 a) Latent heat of vaporization b) Latent heat of fusion
 c) specific heat d) Entropy.
35. When the temperature of a gas is increased at constant pressure, the potential energy of the molecules-----
 a)increases but their kinetic energy decreases
 b)decreases but their kinetic energy increases
 c)as well as their kinetic energy decreases
 d)as well as their kinetic energy increase.

36. The heat transfer in the constant pressure process is equal to the change in -----
a) enthalpy b) entropy c) internal energy d) none of these
37. The value of critical constant V_c is
a) $V_c = b$ b) $V_c = 3b$ c) $V_c = 2b$ d) none of these