1. The dimensions of the kinetic energy are:
   * $\frac{1}{2}ML^2T^2$ * ML^2T^{-2} * $\frac{1}{2}ML^2T^2$ * MLT^{-1}
2. The number of significant figures in 2.500x103 is:
   * 2 * 3 * **4** * 7
3. Screw and lever were invented by:
   * Newton * Al-Farabi * **Archimedes** * Galileo Galilei
4. The author of the book 'Al-Qanoon-Al-Masoodi' is:
   * Al-Razi * Ibne-Sina * Ibn-ul-Haitham * **Al-Beruni**
5. 'Dyne' is the unit of:
   * Angular acceleration * Acceleration * Displacement * **Force**
6. A light year is a unit of:
   * Energy * Time * **Distance** * Intensity of light
7. The dimensions of Angular Momentum is:
   * ML^2T^{-1} * M^2LT^{-} * MLT^2 * MLT^{-1}
8. The most appropriate abbreviation of 0.001 is:
   * $1x10^3$ * $1x10^{-3}$ * $0.1x10^{-2}$ * $1x10^{-3}$
9. One Angstrom $1A^o$ is equal to:
   * 10^{-10}m * 10^{-10}cm * 10^{-6}m * 10^{-8}cm
10. Metre, Kilogram, Second, Ampere, Kelvin, Candela and Mole are the basic units of:
    * **S.I unit system** * C.G.S. System * M.K.S. System * F.P.S. System
11. The number of significant figure of $7.050x10^{-2}$ is:
    * 2 * 3 * **4** * 6
12. Kitabul-Manazir is written by:
    * Ibn-e-sina * **Ibn-ul-Haitham** * Al-Razi * Al-Beruni
13. The dimension of G is:
    * $ML^{-2}T^{-3}$ * $M^{-1}L^{-2}T^{-3}$ * $M^{-1}L^3T^{-2}$ * $M^{-1}L^2T^{-2}$
14. Dimension of pressure is:
    * $ML^{-1}T^{-2}$ * ML^2T^{-3} * $ML^{-2}T^{-2}$ * MLT^{-1}
15. Pinhole camera was invented by:
    * Al-Beruni * **Ibn-ul-Haitham** * Omer Khayyam * Ibn-e-sina
16. The products of two numbers 5.642 and 4.71 In the prospective significant number is:
    * 26.57382 * 26.574 * **26.6** * 26.5738
17. Al-Qanoon-fit-Tib is written by:
    *abu-Rehan Al Beruni * Al Razi * Omer Khayyam * **Ibn-e-Sina**
18. The number of Significant figures in 860.040 is:
    * 2 * 4 * **6** * 5
19. Candela is a unit of:
    ***Intensity of light** * Velocity * Force * Mass
20. The dimension of force is:
    * MLT * MLT^{-1} * MLT^2 * MLT^{-2}
21. The dimension of Torque is:
    * ML^2T * ML^2T^{-2} * ML^2T^2 * MLT^{-2}
22. Two perpendicular vectors having magnitudes of 4 units and 3 units are added. The resultant has the magnitude of:
    * 7 units * 12 units * 25 units * **5 units**
23. If i, j and k are the unit vectors along x, y and z axes respectively, then k x j=
    * I * **-i** * 1 * -1
24. If a vector is divided by its own magnitude, the resulting vector is called:
    * Position vector * **unit vector** * null vector * free vector
25. The resultant of two equal but opposite vectors is a:
    * Free vector * **Null vector** * Unit Vector * None of these

26. $\hat{k}.(\hat{i} \times \hat{j})$ is equal to:

* Zero * **One** * $\hat{j}$ * $-\hat{k}$

27. The magnitude of the resultant of two forces $\vec{F}$ & $\vec{F}$ of equal magnitude is F, when they areinclined at an angle of:

* 0^o * **120^o** * 90^o * 180^o

28. If $\vec{A}.\vec{B} = 0$ and $\vec{A} \times \vec{B} = 0$ and $A \neq 0$,then vector B is:

* Equal to $\vec{A}$ * **Zero** * Perpendicular to $\vec{A}$ * Parallel to $\vec{A}$

29. Two forces of 6N and 8N in same direction can produce a resultant of:

* 0 * 1N * 10N * **18N**

30. The resultant of two forces of same magnitude F making an angle of 180^o with each other is:

* 2F * 0.5 F * **Zero** * F

31. If $\vec{A} = a\hat{i}$ and $\vec{B} = b\hat{j}$, then $\vec{A} \times \vec{B}$ is equal to:

* 0 * ***abk*** * *-abk* * None of these

32. Two forces act together on an object; the magnitude of their resultant is minimum when the angle between them is:

* 0^o * 45^o * 90^o * **180^o**

33. This is not a vector quantity:

* weight * **frequency** * momentum * electric field intensity

34. When $|\vec{A} + \vec{B}| = |\vec{A} - \vec{B}|$, the angle between the vectors $\vec{A}$ *and* $\vec{B}$ is:

* zero * 45^o * **90^o** * 60^o

35. If a light object collides elastically with a massive body which is at rest, the light object will:

* Rebound with the same velocity * be stopped
* **Rebound with twice the velocity** * cause the massive body to move

36. The acceleration of a body moving on a frictionless inclined plane depends on the:

* **Angle of inclined plane** * Length of inclined plane
* Initial velocity of the body * Final velocity of the body

37. A body falling down through a fluid experiences a frictional force which is given by:

* Law of Gravitation * Snell's law * **Stoke's Law** * None of these

38. Stoke's law holds for:

* Bodies of all shapes * Motion through non-viscous medium
* Motion through vacuum * **Motion through viscous medium**

39. When a body slides over a surface, the Kinetic Friction (f_k) and Static friction (f_s) are related as:

* **$f_k < f_s$** * $f_s < f_k$ * $f_k = 0$ * $f_s = 0$

40. How many metre(s) will a 20 kg ball, starting from rest, fall freely in one second?:

* 19.6 m * **9.8 m** * 4.0 m * 4.9 m

41. The acceleration of a body moving down a frictionless place inclined at 30^o will be:

* **4.9 m/s^2** * 9.8 m/s^2 * 98 m/s^2 * 10 m/s^2

42. A one kilogram stone, falling freely from a height of 10 metre, strikes the ground with a velocity of:

* **14 m/s** * 10 m/s * 98 m/s * 19.6 m/s

43. A static stone weighing 1kg falling freely from a height of 10m, strikes the ground with speed:

* 10 m/s * **14 m/s** * 98 m/s * 196 m/s

44. The rate of change of linear momentum is equal to:

* Acceleration * **Force** * Torque * Velocity

45. A helicopter weighing 3920N is moving up with a constant speed of 4m/sec. the force on the helicopter is:

* 4720N * **3920N** * 3924N * 3916N

46. The property of fluids due to which they resist their flow is called:

* Static friction * Coefficient of friction * **Viscosity** * Terminal velocity

47. The unit of linear momentum is:

* $\frac{N}{S}$ * **NS** * JS * $\frac{J}{S}$

48. A body falls freely. The distance covered by it in 2 sec. is:
* 9.8 m * **19.6m** * 39.2 m * 100m

49. If the average and instantaneous velocities of a body are the same, the body will move with:
* Variable velocity * **Uniform velocity** * Uniform acceleration * Variable acceleration

50. If the time interval is very small ($\Delta t \to 0$), the rate of change of displacement of a body is called:
* velocity * **instantaneous velocity** * average velocity * uniform velocity

51. A car travelling at a constant speed of 20 m/s, rounds a curve of radius 100 m. its acceleration is:
* **4 m/s^2** * 40 m/s^2 * 200 m/s^2 * 2000 m/s^2

52. If velocity of a body is decreasing the direction of acceleration is ----
* In the direction of velocity * **opposite to the direction of velocity**
* Perpendicular to the direction of velocity * 60^0 to the direction of velocity

53. A projectile is thrown at an angle of 30° with the horizontal having a certain initial velocity. It will have the same range if thrown with the same velocity as before at an angle of:
* 45° * **60°** * 75° * 15°

54. A projectile has its speed maximum at the moment of:
* Projection * Hitting the ground * **Both of these** * None of these

55. The linear and angular velocity of a particle, moving about the centre of Radius 'r', are related by:
* $\vec{v} = \vec{w} \times \vec{r}$ * $\vec{v} = \vec{r} \times \vec{w}$ * $\vec{w} = \vec{v} \times \vec{r}$ * $\vec{w} = \vec{r} \times \vec{v}$

56. A cyclist cycling around a circular racing track skids because:
* The centripetal force upon him is less than the limiting friction
* **The centripetal force upon him is greater than the limiting friction**
* The centripetal force upon him is equal to the limiting friction
* None of these

57. The horizontal range of a projectile depends upon:
* The angle of projection * The velocity of the projectile
* 'g' at the place * **All of them**

58. When the angular velocity of a disk increases, angular acceleration α and angular velocity ω are:
* **Parallel** * Non parallel * Perpendicular * None of these

59. The centripetal acceleration of a body moving body along a circle is:
* $\frac{4rT^2}{\pi^2}$ * $\frac{4\pi^2 r}{T^2}$ * $\frac{4r^2T^2}{\pi^2}$ * **None of these**

60. If a projectile is thrown at an angle of 35°, it hits a certain target. It will have the same range if its velocity remains the same and it is thrown at an angle of:
* 45° * **55°** * 10° * 65°

61. The angle between centripetal acceleration and tangential acceleration is:
* 0° * 45° * **90°** * 180°

62. An angle subtended at its centre by an arc whose length is double to that of its radius is:
* 84.3° * 57.3° * **114.6°** * 168.6°

63. In projectile motion, constant changes occurs in:
* the horizontal component of velocity * both horizontal and vertical components of velocity
* **the vertical component of velocity** * none of these

64. The angle subtended at its centre by an arc whose length is double to that of its radius is:
* 84.3° * 57.3° * **114.6°** * 168.6°

65. Two forces, which are equal in magnitude but opposite in direction and not acting along the same straight line form:
* Circle * **Couple** * Power * Torque

66. The rate of change of angular momentum is known as:
* **torque** * force * velocity * acceleration

67. While spinning, a dancer suddenly stretches his arms. The angular velocity will:
* remain the same * decrease * **increase** * none of these

68. If the sum of torques acting on a body is zero, then this will be constant:
* Force * **angular momentum** * Linear momentum * Pressure

69. Angular momentum of a particle changes from 0 to 720 J.S. in 4 sec.; the magnitude of torque acting will be:
* 1440 J.S. * 360 J.S. * **180 J.S** * 4.5 J.S.

70. This physical quantity produces angular acceleration:
* **Torque** * Power * Work * Energy

71. The magnitude of torque of the couple depends on:
* The distance of ($\vec{F}$) from origin * The distance of (-$\vec{F}$) from origin
* **The distance between ($\vec{F}$) and (-$\vec{F}$)** * None of these

72. If the axis of rotation of a body passes through the body itself, then its motion is called:
* Linear motion * Orbital motion * **Spin motion** * S.H.motion

73. When the angular velocity of a disk increases, angular acceleration α and angular velocity ω are:
* **Parallel** * Non parallel * Perpendicular * None of these

74. Torque is defined as the time rate of change of:
* **Angular momentum** * Linear momentum
* Angular velocity * Angular acceleration

75. The angular momentum of a particle is conserved if the:
* **Net torque acting on the particle is zero** * Net force acting on the particle is zero
* The acceleration of the particle is zero * Net displacement of the particle is zero

76. A man goes up to a height from earth's surface equal to the radius of the earth. His weight relative to the earth's surface would:
* Become half * remain the same * become double * **become one-fourth**

77. The weight of a body in a satellite orbiting around the earth is:
* Equal to actual weight * **Zero**
* Greater than the actual weight * Less than the actual weight

78. An object weighs 10N. what will the spring balance read if the Elevator is descending at constant velocity of 9.8 m/s:
* Zero * 98 N * 19.8 N * **10 N**

79. The acceleration due to gravity on the moon is $\frac{1}{6}th$ that on the earth's surface. What will be the mass of a body on the moon if its mass on the earth is m?:
* $\frac{m}{6}$ * 6m * **m** * $\frac{m}{3}$

80. The weight of a man is 600 N at the earth; his weight on the moon, where $g_m = \frac{g}{6}$, will be:
* 3600 N * 600 N * 300 N * **100 N**

81. The weight of a body at the centre of the Earth would be:
* Maximum * Minimum * **Zero** * Infinite

82. If the radius of the earth were to shrink and its mass were to remain the same, the acceleration due to gravity on the surface of the earth will:
* decrease * remain the same * increase * become zero

83. The dot product of force and velocity is:
* **Power** * Acceleration * Energy * Torque

84. The work done along the closed path in a conservative field is:
* Positive * Negative * **zero** * Infinite

85. One horse power is equal to:
* 400 watts * 550 watts * 70 watts * **746 watts**

86. The rate of doing work is Zero when the angle between force and velocity is:
* 0° * 45° * 180° * **90°**

87. If mass and speed both are doubled, the kinetic energy will be:
* double * four times * six times * **eight times**

88. Kilowatt hour is a unit of:
* **Energy** * Power * Time * Force

89. A weight lifter consumes 500J of energy to lift a load in 2 seconds, the power used by him is:
* 125 watt * **250 watt** * 500 watt * 1000 watt

90. Watt-hour is the unit of:
* Force * Acceleration * Velocity * **Energy**

91. Power is equal to:
* $\vec{F} \times \frac{\vec{d}}{t}$ * $\vec{F} \cdot \frac{\vec{v}}{t}$ * $\vec{F} \times \frac{\vec{v}}{t}$ * $\vec{F} \cdot \frac{\vec{d}}{t}$

92. A bucket of mass 10 kg is moved downwards in the gravitational field through a distance of 1m. the work done in this case is equal to:
* 10 joule * **98 joule** * -98 joule * 0.1 joule

93. If the speed of moving body is halved, its kinetic energy becomes:
* **One fourth** * Half * Three times * Four times

94. When a body moves vertically upward, the work done will be:
* Positive * **Negative** * Zero * Maximum

95. When a body moves vertically upward, its potential energy:
* **Increases** * Decreases * Remains the same * Is maximum

96. When a body is thrown vertically upward, its kinetic energy at the maximum height is:
* Maximum * Minimum * Equal to potential energy * **Zero**

97. two vibrating bodies having slightly different frequencies produce----
* Echo * **Beats** * Resonance * Polarization

98. If the mass of the bob of a simple pendulum is doubled, its time period will:
* Be doubled * become fourfold * be halved * **not change**

99. The velocity of sound in space is:
* **zero** * 330 m/s * 332 m/s * 344 m/s

100. The maximum number of beats/sec. that the human ear can detect is:
* 3 * 5 * **7** * 9

101. If two tuning forks of frequencies 256 Hz and 260 Hz are sounded together, the number of beats per second will be:
* 3 * **4** * 5 * 7

102. The distance between two consecutive nodes of a stationary wave will be:
* λ * $\lambda/2$ * $\lambda/4$ * $\lambda/6$

103. The earthquake waves are the example of:
* Audible waves * **Infrasonic waves** * Shock waves * Ultrasonic waves

104. Power Law determines:
* Power * Work * Intensity * **Loudness of sound**

105. The time period of simple pendulum depends upon:
* mass * Length
* acceleration due to gravity * **Both length and acceleration due to gravity**

106. A wave enters from one medium to another medium; no change occurs in its:
* **Frequency** * Wavelength * Amplitude * Speed

107. The frequency of wave produced in a stretched string depends upon:
* Length * Tension * Linear density * **All of these**

108. The S.I. unit of intensity level of sound is:
* Watt * Dioptre * Sone * **Decibel**

109. $\sin\theta = \theta$, if θ is specifically less then:
* 15° * 10° * 5° * 90°

110. This property of sound is affected by the change in temperature:
* **Amplitude** * Wave length * Frequency * Intensity

111. This is compressional waves:
* Light wave * **Sound wave** * Radio wave * X-Rays

112. Earthquake waves are the example of:
* Audio waves * **Infrasonic waves** * Ultrasonic waves * Shock waves

113. Which of the following does not exhibit Simple Harmonic Motion:
* A hanging spring supporting a weight * The balance wheel of a watch
* **The wheel of an automobile** * The string of a violin

114. Pitch depends upon:
* **Frequency** * Loudness * Time period * Distance

115. A sound wave travels from air to water, which one if the following quantities remains unchanged:
* Intensity * Wave Length * **Frequency** * Velocity

116. The sound waves of frequencies above 20 K Hz are called:
* **Audible waves** * Infrasonic waves * Ultrasonic waves * None of these

117. If a stretched string vibrates in one loop, how many anti-nodes are formed?:
* **1** * 2 * 3 * 4

118. The velocity of a bob simple pendulum at its mean position is:
* **Maximum** * Minimum * Zero * None of these

119. The velocity of sound has maximum value in:
* **Solids** * liquids * gases * free space

120. If the tension of a stretched string is increased 4 times, the speed of the transverse wave in it will increase:
* 4 times * 8 times * **2 times** * 16 times

121. If two tuning forks with frequencies 256 Hz and 262 are sounded together, the beats frequency will be:
* 3 * 4 * 5 * **6**

122. The S. I unit of intensity of sound is:
* **Watt/m^2** * decibel * weber * dioptre

123. A body executes simple harmonic motion if:
* A = K.x * v = -k.x * $a = -\sqrt{k}.x$ * **$a = -k x^2$**

124. The central spot in the Newton's Rings appear dark due to:
* **Phase reversal only** * Path difference zero only
* Both phase reversal and path difference being zero * Intensity of light is maximum

125. When the movable mirror in a Michelson Interferometer moves a distance equal to wave length of light, the interference pattern moves by:
* 01 Fringe * **02 Fringes**
* Odd half integral multiple of Fringes * ½ Fringe

126. We can see various objects because they:
* Absorb light * **Reflect light** * Emit Light * Refract Light

127. In Young's double-slit experiment, the condition for the constructive interference is that the path difference must be:
* An odd multiple of the half wavelength * An odd multiple of the whole wavelength
* **An integral multiple of the wavelength** * An even number of the wavelength

128. The wave theory of light cannot explain:
* Polarization * **Photoelectric effect** * Interference * Diffraction

129. Electromagnetic waves consist of oscillating electric and magnetic fields, both are:
* Parallel to each other * **Perpendicular to each other**
* Non parallel to each other * None of these

130. Polarization of light due to tourmaline crystal takes place :
* Reflection * **Selective absorption** * Refraction * Diffraction

131. According to Maxwell's theory, light travels in the form of:
* Transverse wave * Longitudinal wave * Mechanical wave * **Electromagnetic wave**

132. Huygen's Principle is used to:
* Determine the speed of light * Expressed polarization
* **Locate the wave front** * Find the refrective index

133. This is not the property of sound waves:
* Interference * Diffraction * **Polarization** * Refraction

134. Monochromatic yellow light is unable to show:
* reflection * refraction * **dispersion** * interference

135. Yellow light from a sodium lamp is used to form Newton's rings. The central spot in Newton's ring will be:
* Yellow * **Dark** * Bright * Blue

136. The bending ability of light around an obstacle is known as:
* interference * polarization * refraction * **diffraction**

137. In Young's double slit experiment, if separation between slits is increased, then fringe spacing will:
* increase * **decrease** * remain the same * become infinity

138. This equation represents Bragg's law
* $m\lambda = d\sin\theta$ * **$m\lambda = 2d\sin\theta$** * $2m\lambda = d\sin\theta$ * $2m\lambda = 3d\sin\theta$

139. The distance b/w the principal focus and the optical center is called—
* Aperture * Radius of curvature * **Focal length** * Principal focus

140. The power of a convex lens is 4 diopter its focal length is:
* 10 cm * 20 cm * **25 cm** * 50 cm

141. This instrument is used to study the spectrum of luminous bodies:
* Telescope * Microscope * **Spectrometer** * Magnifying glass

142. If the power of a converging lens is 2.5 diopter, the focal of lens is:
* 25 cm * 60 cm * 50 cm * **40 cm**

143. The focal length of a convex lens is 0.5 cm, its power will be:
* 0.5 diopter * 2 diopters * 20 diopters * **200 diopters**

144. If an object is placed at principle focus 'F' of a converging lens, the image will be formed:
* at F * at 2F * **at infinity** * between focus & optical centre

145. In the terrestrial telescope, the central lens is used to:
* **erect the image** * increase magnifying power * both of these * none of these

146. This defect can be easily corrected by reducing aperture of the lens:
* Hyperopia * Chromatic Aberration * **Spherical Aberration** * Astigmatism

147. If magnifying power of simple microscope is 6, the focal length of the lens used is:
* 6 cm * **5 cm** * 25 cm * -5 cm

148. The length of Galilean telescope is equal to:
* $\frac{f_o}{f_e}$ * $f_o - f_e$ * $f_e - f_o$ * $f_o + f_e$

149. By using adjustable aperture of a lens we can reduce the defect of the lens which is called:
* Astigmatism * Chromatic Aberration
* **Spherical Aberration** * None of them

150. Defect of colour blindness is cured by using:
* Convex lens * Concave lens * Cylindrical lens * **None of these**

151. Two convex lenses of the same focal length (f) are kept in contact with each other. The focal length of the combined lens will be:
* $2f$ * $\frac{f}{2}$ * $\frac{2}{f}$ * f

152. If the power of a lens is one dioptre, its focal length is:
* **1 metre** * 0.5 metre * 2 metres * 4 metres