

Chapter No. 5

1. The S.I units of angular momentum is given by
 a. J s b. J s⁻¹ c. J s⁻² d. J m
2. One radian is equal to
 a. 57.3° b. 58.3° c. 68.3° d. 360°
3. A man of 5 kg falling freely, the force acting on it will be
 a. 5 N b. 9.8 N c. 19.6 N d. zero
5. The dimensions of angular velocity is
 a. LT⁻¹ b. LT⁻² c. L²T d. T⁻¹
6. The centripetal acceleration is also called
 a. tangential b. radial c. angular d. rotational
7. 1 rev/min is equal to
 a. $\pi/6$ rad/s b. $\pi/15$ rad/s c. $\pi/20$ rad/s d. $\pi/30$ rad/s
8. When a body moves in a circle, the angle between its linear velocity \vec{v} and angular velocity $\vec{\omega}$ is:
 (A) 180° (B) 90° (C) 0° (D) 45°
9. The linear velocity of disc moving down an inclined plane is:
 (A) \sqrt{gh} (B) $\sqrt{\frac{4}{3}gh}$ (C) $\sqrt{\frac{2}{3}gh}$ (D) $\sqrt{\frac{gh}{2}}$
10. One Geo-stationary satellite covers a longitude of:
 (A) 270° (B) 120° (C) 90° (D) 360°
11. The force which can do no work on the body on which it acts is:
 (A) Elastic force (B) Frictional force (C) Centripetal force (D) Gravitational force
12. The angular momentum \vec{L} is given by:
 (A) $m\vec{\omega}$ (B) $\vec{\omega} \times \vec{r}$ (C) $\vec{r} \times \vec{F}$ (D) $\vec{r} \times \vec{P}$
13. Minimum number of communication satellites required to cover whole of earth is:
 (A) 5 (B) 4 (C) 3 (D) 2
14. One radian is equal to:
 (A) 67.3° (B) 57.3° (C) 87.3° (D) 45°
15. The SI unit of angular acceleration is:
 (A) rad/s² (B) rad/sec (C) rev/s² (D) rev/s
16. The apparent weight of a man in a lift moving down with an acceleration of 9.8 m/s² is:
 (A) zero (B) 9.8 N (C) 19.6 N (D) infinity
17. Rotational kinetic energy of disc and hoop is:
 (A) $\frac{1}{2} I\omega^2$ (B) $I\omega^2$ (C) $2 I\omega^2$ (D) $3 I\omega^2$
18. The apparent weight of a man in an ascending lift moving with acceleration 'a':
 (A) Increases (B) Decreases (C) Remains constant (D) Becomes zero

19. The ratio between orbital and escape velocity is:
- (A) 1 (B) 2 (C) $\sqrt{2}$ (D) $\frac{1}{\sqrt{2}}$
20. International Telecommunication Satellite Organization operates at microwave frequencies of
- (A) 4, 6, 8 and 10 Hz (B) 4, 6, 11 and 14 GHz
(C) 4, 6, 8 and 12 Hz (D) 4, 8, 11, 16 GHz
21. When a body is whirled in a horizontal circle by a string, centripetal force is supplied by
- (A) mass of body (B) velocity of body
(C) acceleration of body (D) tension in string
22. If a car moves with uniform velocity of 2 m/s in a circle of radius 0.4 m, its angular speed is
- (A) 4 rad/s (B) 5 rad/s (C) 1.6 rad/s (D) 2.8 rad/s
23. Weight of 60 kg man in moving elevator (downward) with constant acceleration $\frac{1}{2}g$ ($g = 10 \text{ m/s}^2$)
- (A) zero (B) 200 N (C) 300 N (D) 600 N
24. One radian is equal to:
- (A) 2π rev (B) $\pi/4$ rev (C) $\pi/2$ rev (D) $1/2\pi$ rev