PROBABLE QUESTIONS OF ENGINEERING MECHANICS
2ND SEMESTER MECHANICAL ENGG

1. What do you mean by Force System, Classify force system according to plane & line of action ?
2. Explain about the Characteristics of Force & effect of Force ?
3. Differentiate between Principles of Transmissibility & Principles of Superposition ?
4. What do you mean by Resolution of a Force and Method of Resolution ?
5. Explain Analytical Method such as Law of Parallelogram of forces & method of resolution ?
6. Describe Resultant of concurrent, non-concurrent & parallel force system by Analytical & Graphical Method ?
7. What do you mean by Moment of Force, how to measure the moment of a force & its S.I units ?
8. Explain Moment of Force, how to measure the moment of a force & its S.I units ?
9. Explain Varignon's Theorem with figure ?
10. What do you mean by a couple and write down the properties of couple ?
11. Explain lami's theorem with neat figure ?
12. Define Limiting frictional force & Coefficient of Friction ?
13. Define Angle of Friction & Repose & Laws of Friction ?
14. Differentiate between Parallel axis & Perpendicular axis Theorems ?
15. M.I. of plane lamina & different engineering sections ?
16. Explain simple & compound lifting machine ?
17. State Law of Machine, Reversibility of Machine, Self-Locking Machine ?
18. Discuss Single purchase crab winch ?
19. Discuss double purchase crab winch ?
20. Discuss Screw Jack ?
21. Define Kinematics & Kinetics, Principles of Dynamics, Newton's Laws of Motion ?
22. Explain De-Alembert's Principle & its Engineering Applications ?
23. Define Kinetic & Potential energy & its application ?
24. Define Momentum & impulse, conservation of energy & linear momentum ?\
25. Define collision of elastic bodies and Coefficient of Restitution ?
26. Effect of a force on a body depends upon
    (a) Magnitude
    (b) Direction
    (c) Position or line of action
    (d) All of the above
27. Which of the following is a vector quantity
    (a) Energy
    (b) Mass
    (c) Momentum
    (d) Angle
28. Angle of friction is the
    (a) Angle between normal reaction and the resultant of normal reaction and the limiting friction
    (b) Ratio of limiting friction and normal reaction
    (c) The ratio of minimum friction force to the friction force acting when the body is just about to move
    (d) The ratio of minimum friction force to friction force acting when the body is in motion

29. The ratio of limiting friction and normal reaction is known as

(a) Coefficient of friction

(b) Angle of friction

(c) Angle of repose

(d) Sliding friction

30. It is the friction experienced by a body when it is at rest. This type of friction is known as

a. Dynamic Friction
b. Sliding friction
c. Rolling friction
d. Static friction

31. When a body slides over another body the type of friction generated is known as

a. Limiting Friction
b. Rolling friction
c. Sliding Friction
d. Fluid Friction

32. The maximum inclined plane with the horizontal for which a body lying on the inclined plane will be on the point of sliding down is called

a. Angle of repose
b. Angle of friction
c. Normal Reaction
d. Angle of deviation

33. The force of friction (F) is equal to

a. $\mu R/2$
b. μR
c. $2\mu R$
d. $\mu R/3$

34. According to principle of moments

(a) If a system of coplanar forces is in equilibrium, then their algebraic sum is zero

(b) If a system of coplanar forces is in equilibrium, then the algebric sum of their moments about any point in their plane is zero

(c) The algebraic sum of the moments of any two forces about any point is equal to moment of the resultant about the same point

(d) Positive and negative couples can be balanced

35. According to principle of transmissibility of forces, the effect of a force upon a body is

(a) Maximum when it acts at the center of gravity of a body

(b) Different at different points in its line of action

(c) The same at every point in its line of action

(d) Minimum when it acts at the C.G. of the body