UNIT 4
TURNING EFFECT OF FORCE

MULTIPLE CHOICE QUESTIONS

1. **If a number of forces act on a body such that their points of action are different but lines of action are parallel to each other then these forces are known as ---------- forces:**
(a) Same **(b)** Parallel
(c) Perpendicular **(d)** None of above

2. **If the direction of parallel forces is the same, then these are called ---------- forces:**
(a) Same **(b)** Like Parallel
(c) Unlike Parallel **(d)** All of above

3. **If the direction of parallel forces is the opposite, then these are called ---------- forces:**
(a) Same **(b)** Like Parallel
(c) Unlike Parallel **(d)** All of above

4. **Addition of vectors are done by:**
(a) Head to tail rule **(b)** Left hand rule
(c) Right hand rule **(d)** None of above

5. **Component of a vector acting along the x – axis is called:**
(a) x – component **(b)** horizontal component
(c) vertical component **(d)** both a and b

6. **component of a vector acting along the y – axis is called:**
(a) x – component **(b)** horizontal component
(c) vertical component **(d)** both a and b

7. **Value of sin 30^0:**
(a) 0.5 **(b)** 0.866
(c) 0.707 **(d)** none of them

8. **During rotation the particles of the body rotate along fixed circles. The straight line joining the centres of these circles is known as:**
(a) Parallel line **(b)** Axis of rotation
(c) Both a & b **(d)** None of above

9. **The rotational effect of a body is measured by a quantity known as:**
(a) Acceleration **(b)** Velocity
(c) Displacement **(d)** Torque

10. **The rotation produced in a body depends upon ---------- factors:**
(a) 1 **(b)** 2
(c) 3 **(d)** 4

11. **Torque is a ---------- quantity:**
(a) Base **(b)** Vector
(c) Scalar **(d)** Both a & b

12. **The direction of torque is determined by ---------- rule:**

(a) Left hand (b) Right hand
(c) Both a & b (d) None of above

13. **If the rotation produced in anticlock wise direction then the torque is taken as:**
(a) Positive (b) Negative
(c) Opposite (d) Perpendicular

14. **If the rotation is produced in clock wise direction then the torque is taken as:**
(a) Positive (b) Negative
(c) Opposite (d) Perpendicular

15. **According to right hand rule, if ---------- is along the curl of the fingers of the right hand then the thumb points in the direction of the torque:**
(a) Rotation (b) Parallel
(c) Force (d) Weight

16. **In System International, the unit of torque is:**
(a) N (b) Nm^{-2}
(c) Nm^{-1} (d) Nm

17. **The force which is acting perpendicularly downwards towards the earth is called:**
(a) Torque (b) Weight
(c) Force of gravity (d) Both b & c

18. **The point at which whole weight of the body appears to act is called:**
(a) Origin (b) Couple
(c) Centre of Gravity (d) Reference point

19. **The position of the centre of gravity depends upon the ----- of the body:**
(a) Size (b) Shape
(c) Weight (d) Force

20. **The centre of gravity of parallelogram, rectangle, square is the:**
(a) Point of intersection of the medians (b) Central point of axis
(c) Point of intersection of the diagonals (d) Centre of parallelogram

21. **The centre of gravity of a regular shaped body is always on its centre of ----------:**
(a) Body (b) Symmetry
(c) Medians (d) Axis

22. **The centre of gravity of triangle is the:**
(a) Point of intersection of the medians (b) Central point of axis
(c) Point of intersection of the diagonals (d) Centre of parallelogram

23. **The centre of gravity of cylinder is the:**
(a) Point of intersection of the medians (b) Central point of axis
(c) Point of intersection of the diagonals (d) Centre of parallelogram

24. **When two equal, opposite and parallel forces act at two points of the same body, they form a:**
(a) Torque (b) Moment of a couple
(c) Force (d) Couple

25. **A ---------- is always acting while opening or closing water tap, a lock, stopper of a bottle or jar:**
(a) Couple (b) Weight
(c) Force (d) Mass

26. **The perpendicular distance between the line of action of force and centre of rotation and denoted by 'r' is called:**
(a) Centre of gravity (b) Moment arm
(c) Displacement (d) Force

27. **The torque produced in a body due to a couple is equal to the product of one of the forces and the ----------:**
(a) Couple (b) Force

(c) Like parallel force (d) Couple arm

28. There are ---------- conditions of equilibrium: (LHR 2013)

(a) 1 (b) 2
(c) 3 (d) 4

29. When the sum of all the force acting on a body is zero or the object is moving with uniform velocity then it will be in ----------:

(a) Rest (b) Motion
(c) Equilibrium (d) None of above

30. According to First condition of equilibrium, the sum of all the forces acting on the body should be ----------:

(a) Positive (b) Zero
(c) None (d) All of above

31. First condition of equilibrium is represented by:

(a) $\sum F = 0$ (b) $\sum F_x = 0$
(c) $\sum F_y = 0$ (d) All of above

32. According to Second condition of equilibrium, the sum of all the torques acting on the body should be ----------:

(a) Positive (b) Zero
(c) None (d) All of above

33. Second condition of equilibrium is represented by:

(a) $\sum \tau = 0$ (b) $\sum F = 0$
(c) Both a & b (d) All of above

34. Sigma ($\sum$) is the Greek letter which is used to represent:

(a) Addition (b) Subtraction
(c) Multiplication (d) Division

35. There are ---------- states of equilibrium:

(a) 1 (b) 2
(c) 3 (d) 4

36. The equilibrium in which the body comes back to its original condition when set free after slightly lifting from one side is --------- equilibrium:

(a) Stable (b) Unstable
(c) Neutral (d) None of above

37. The equilibrium in which the body does not come back to its original condition when set free after slightly lifting from one side is --------- equilibrium:

(a) Stable (b) Unstable
(c) Neutral (d) None of above

38. The type of equilibrium in which after disturbance, the body again comes to rest position and center of gravity remains unchanged:

(a) Stable (b) Unstable
(c) Neutral (d) None of above

39. In Stable equilibrium, the centre of gravity is ---------- than the original position:

(a) Raised (b) Lowered
(c) Remain same (d) All of above

40. In Unstable equilibrium, the centre of gravity is ---------- than the original position:

(a) Raised (b) Lowered
(c) Remain same (d) All of above

41. In Neutral equilibrium, the centre of gravity ---------- than the original position:

(a) Raised (b) Lowered
(c) Remain same (d) All of above

42. When an object is resting on the smooth horizontal surface, the weight of the object is balanced by ----------:

(a) Normal Reaction (b) Torque
(c) Friction (d) Couple

43. A meter rod on a wedge is an example of ---------- equilibrium
(a) Stable (b) Unstable
(c) Neutral (d) None of above

44. A book lying on the table is an example of ---------- equilibrium:
(a) Stable (b) Unstable
(c) Neutral (d) None of above

45. Motion of the football on the ground is an example of ------- equilibrium:
(a) Stable (b) Unstable
(c) Neutral (d) None of above

46. The ---------- of a racing car is kept low to make its stable:
(a) Width (b) Height
(c) Length (d) Weight

47. If the centre of gravity of the body is below the fulcrum then the body will be in ---------- equilibrium:
(a) Stable (b) Unstable
(c) Neutral (d) None of above

ANSWER KEY

Q.	An	Q.	An	Q.	An	Q.	Ans	Q.	An
1	b	11	b	21	b	31	d	41	c
2	b	12	b	22	a	32	b	42	a
3	c	13	a	23	b	33	a	43	b
4	a	14	b	24	d	34	a	44	a
5	d	15	a	25	a	35	c	45	c
6	c	16	d	26	b	36	a	46	b
7	a	17	d	27	d	37	b	47	a
8	b	18	c	28	b	38	c		
9	d	19	b	29	c	39	a		
10	b	20	c	30	b	40	b		