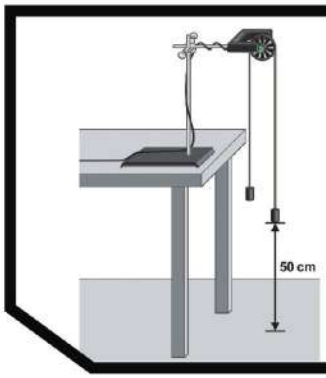

UNIT 3

DYNAMICS

MULTIPLE CHOICE QUESTIONS

1. **Laws of motion was presented by:**
   (a) Einstein **(b)** Newton
   (c) Galileo **(d)** Archimedes
2. **Isaac Newton described the laws of motion in his famous book:**
   (a) Qanoon-ul-Masoodi **(b)** Principia Mathematica
   (c) Kitab-ul-Astralab **(d)** Al-Manazir
3. **The laws of motion established the relationship between motion and --------:**
   (a) Force **(b)** Torque
   (c) Acceleration **(d)** Momentum
4. **First law of motion is also known as law of ----------:**
   (a) Torque **(b)** Acceleration
   (c) Inertia **(d)** None of these
5. **---------- of a body is the direct measure of inertia:**
   (a) Mass **(b)** Energy
   (c) Momentum **(d)** All of above
6. **The characteristic of a body due to which it tends to retain its state of rest or of uniform motion is known as:**
   (a) Weight **(b)** Force
   (c) Inertia **(d)** Momentum
7. **---------- is the agency which changes or tends to change the state of rest or of uniform motion of a body:**
   (a) Weight **(b)** Force
   (c) Inertia **(d)** Momentum
8. **Law of inertia is actually the ---------- law of motion:**
   (a) First **(b)** Second
   (c) Third **(d)** Fourth
9. **When a force is applied on the body, ---------- is produced in the body:**
   (a) Weight **(b)** Acceleration
   (c) Energy **(d)** None of the above
10. **The acceleration produced in a moving body is always in the direction of applied ----------:**
    (a) Velocity **(b)** Force
    (c) Speed **(d)** Momentum
11. **If mass of the body is doubled while keeping the force constant, then acceleration will be:**
    (a) One half **(b)** doubled
    (c) One fourth **(d)** Four times

12. If force applied on the body is doubled while keeping the mass constant, then acceleration will be:

(a) One half **(b)** doubled
(c) One fourth **(d)** Four times

13. SI unit of force is:

(a) Kilogram **(b)** Dynes
(c) newton **(d)** Pound

14. When a force of 8 newton is applied on a body of mass 2 kg, then the acceleration produced will be:

(a) 16 ms^{-2} **(b)** 4 ms^{-2}
(c) 0.4 ms^{-2} **(d)** 160 ms^{-2}

15. 1 N = ---------- **(GRW 2014)**

(a) $kgms^{-2}$ **(b)** $kgms^{-1}$
(c) kgm^2s^{-1} **(d)** kg^2ms^{-2}

16. Action and reaction are equal in magnitude but opposite in direction is known as ---------- law of motion:

(a) First **(b)** Second
(c) Third **(d)** Fourth

17. Walking on road is an example of ---------- law of motion:

(a) First **(b)** Second
(c) Third **(d)** Fourth

18. When a block is lying on a smooth surface, its weight is balanced by:

(a) Mass **(b)** Momentum
(c) Inertia **(d)** Normal Reaction

19. The weight of a body of mass 10 kg on earth will be ----------:

(a) 10 N **(b)** 1 N
(c) 100 N **(d)** 1000 N

20. The ---------- of a body always acting towards the center of the earth:

(a) Mass **(b)** Force
(c) Velocity **(d)** Weight

21. Quantity of matter in a body:

(a) Mass **(b)** Force
(c) Velocity **(d)** Weight

22. The Force with which earth attracts a body towards its centre is known as:

(a) Mass **(b)** Force
(c) Weight **(d)** Inertia

23. The characteristic of a body which determines the magnitude of acceleration produced when a certain force acts upon it:

(a) Mass **(b)** Force
(c) Inertia **(d)** Weight

24. Mass of the body is measured by:

(a) Free Fall Apparatus **(b)** Physical balance
(c) Spring balance **(d)** All of above

25. Weight of the body is measured by:

(a) Free Fall Apparatus **(b)** Physical balance
(c) Spring balance **(d)** All of above

26. Unit of weight is:

(a) kg **(b)** ms^{-1}
(c) Nm **(d)** N

27. ---------- of a body remains same every where:

(a) Weight **(b)** Acceleration
(c) Velocity **(d)** Mass

28. **---------- of a body does not remain same every where:**
(a) Weight **(b)** Inertia
(c) Mass **(d)** All of above

29. **The value of weight of a body of constant mass depends on:**
(a) Inertia **(b)** Momentum
(c) Force **(d)** 'g'

30. **Mass is a ---------- quantity:**
(a) Scalar **(b)** Vector
(c) Derived **(d)** Negative

31. **Weight is a ---------- quantity:**
(a) Scalar **(b)** Vector
(c) Unitless **(d)** Negative

32. **When a block is hanging with the help of a rope then weight of the body is balanced by:**
(a) Acceleration **(b)** Inertia
(c) Displacement **(d)** Tension

33. **There are -------- cases of motion of the body hanging with the help of rope:**
(a) 1 **(b)** 2
(c) 3 **(d)** 4

34. **The tension produced when one body moves vertically and the other moves horizontally is ---------- as compared to the tension produced when both bodies move vertically:**
(a) Half **(b)** One fourth
(c) Double **(d)** Four times

35. **Quantity of motion in a body is known as:**
(a) Mass **(b)** Momentum
(c) Velocity **(d)** Acceleration

36. **Product of mass and velocity is known as:**
(a) Force **(b)** Speed
(c) Momentum **(d)** Acceleration

37. **SI unit of Momentum is:** **(GRW 2013, LHR 2015)**
(a) $Kgms^{-2}$ **(b)** Ns
(c) $Kgms^{-1}$ **(d)** Both b & c

38. **$Kgms^{-1}$ = ----------**
(a) N **(b)** J
(c) Ns **(d)** W

39. **Rate of change of momentum is equal to:**
(a) Force **(b)** Velocity
(c) Acceleration **(d)** Impulse

40. **Direction of the rate of change of momentum is in the direction of:**
(a) Acceleration **(b)** Momentum
(c) Velocity **(d)** Force

41. **The force which resists the motion of one surface on another surface is known as:**
(a) Gravity **(b)** Friction
(c) Weight **(d)** Repulsion

42. **When object is at rest, the force of friction is known as ---------- friction:**
(a) Static **(b)** Limiting
(c) Kinetic **(d)** Dynamics

43. **The maximum value of static friction is known as ---------- friction:**
(a) Static **(b)** Limiting
(c) Kinetic **(d)** Dynamics

44. **When an object is in motion then the force of friction is known as -----friction:**
(a) Static **(b)** Limiting
(c) Kinetic **(d)** Dynamics

45. Static friction is ---------- than kinetic friction:
(a) Less **(b)** Quartered
(c) Greater **(d)** Equal

46. Rolling friction is ---------- than Sliding friction:
(a) Less **(b)** Quartered
(c) Greater **(d)** Equal

47. The coefficient of friction has ---------- unit:
(a) Newton **(b)** Dynes
(c) No **(d)** Kilogram

48. Friction of liquids is ---------- than friction of solids:
(a) Less **(b)** Quartered
(c) Greater **(d)** Equal

49. Coefficient of friction does not depend upon the ---------- between two surfaces:
(a) Area of contact **(b)** Normal Reaction
(c) Weight **(d)** Roughness

50. The rolling friction is about ---------- times smaller than sliding friction:
(a) 10 **(b)** 50
(c) 100 **(d)** 1000

51. Friction in the human joints is much reduced due to the presence of:
(a) Bones **(b)** Muscles
(c) Fluid **(d)** Gas

52. Value of coefficient of friction (μ_k) depends upon:
(a) Nature of the surfaces **(b)** Area of contact
(c) Force **(d)** All of above

53. The Rotation of water sprinkler is an example of ---------- law of motion:
(a) First **(b)** Second
(c) Third **(d)** Fourth

54. A spider web remains intact due to:
(a) Weight **(b)** Momentum
(c) Tension **(d)** None of these

55. Momentum of a moving body depends upon its:
(a) Mass **(b)** Velocity
(c) Weight **(d)** Both a & b

56. Motion of the rocket is an example of:
(a) First law of motion **(b)** Law of conservation of Momentum
(c) Law of conservation of Energy **(d)** Weight

57. Value of coefficient of static friction (μ_s) is usually ---------- than coefficient of kinetic friction (μ_k):
(a) Less **(b)** Quartered
(c) Greater **(d)** Equal

58. When air is released from an inflated balloon, it shoots off is an example of:
(a) First law of motion **(b)** Law of conservation of Energy
(c) Weight **(d)** Law of conservation of Momentum

59. Sliding friction is commonly converted into Rolling friction by the use of:
(a) Ball bearing **(b)** Oil
(c) Grease **(d)** Polish

60. The front sides of high speed vehicles, aeroplanes and ships are shaped wedge like to reduce:
(a) Weight **(b)** Pressure
(c) Speed **(d)** Friction

ANSWER KEY

Q.	Ans	Q.	Ans	Q.	Ans	Q.	Ans	Q.	Ans	Q.	Ans
1	b	11	a	21	a	31	b	41	b	51	c
2	b	12	b	22	c	32	d	42	a	52	a
3	a	13	c	23	a	33	b	43	b	53	c
4	c	14	b	24	b	34	a	44	c	54	c
5	a	15	a	25	c	35	b	45	c	55	d
6	c	16	c	26	d	36	c	46	a	56	b
7	b	17	c	27	d	37	d	47	c	57	c
8	a	18	d	28	a	38	c	48	a	58	d
9	b	19	c	29	d	39	a	49	a	59	a
10	b	20	d	30	a	40	d	50	c	60	d