Force and Laws of Motion
Multiple Choice Questions

Question 1:   Inertia is _____.
1. a property of matter
2. a type of force
3. the speed of an object
4. none of the above

Answer: 1

Question 2:   A and B are two objects with masses 100 kg and 75 kg respectively, then _____.
1. both will have the same inertia
2. B will have more inertia
3. A will have more inertia
4. both will have less inertia

Answer: 3

Question 3:   The resultant of balanced forces is _____.
1. non zero
2. equal to zero
3. not equal to zero
4. equal to the acceleration produced in the body

Answer: 2

Question 4:   The physical quantity, which is the measure of inertia, is _____.
1. density
2. weight
3. force
4. mass

Answer: 4

Question 5:   The sparks produced during sharpening of a knife against a grinding wheel leaves the rim of the wheel tangentially. This is due to _____.
1. inertia of rest
2. inertia of motion
3. inertia of direction
4. force applied

Answer: 3

Question 6:   The law that gives a qualitative definition of force is _____
1. Newton's second law of motion
2. Law of inertia
3. Newton's third law of motion
4. Law of gravitation

Answer: 2

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Question 7: Name the property of matter due to which a body continues in its state of rest or uniform motion unless an external force acts on it.

1. Inertia
2. Elasticity
3. Viscosity
4. Density

Answer: 1

Question 8: The S.I. unit of force is

1. erg
2. joule
3. newton
4. dyne

Answer: 3

Question 9: When a force of 1N acts on a mass of 1kg that is free to move, the object moves with

1. a speed of 1 m/s
2. a speed of 1 km/s
3. an acceleration 10 m/s^2
4. an acceleration of 1 m/s^2

Answer: 4

Question 10: The acceleration in a body is due to

1. balanced force
2. unbalanced force
3. mass
4. electrostatic force

Answer: 2

Question 11: When an object undergoes acceleration

1. its speed always increases
2. its velocity always increases
3. it always falls towards the Earth
4. a force always acts on it

Answer: 4

Question 12: A force of 10 N is acting on an object of mass 10 kg. What is the acceleration produced in it?

1. $1 \, m/s^2$
2. $1 \, m/s$
3. 100 m/s^2
4. 100 m/s

Answer: 1

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Question 13: What is the force acting on an object of mass 10 kg moving with a uniform velocity of 10 m/s?

       1. 100 N
       2. 10 N
       3. 0
       4. 1 N

                                 Answer: 3

Question 14: An athlete can take a longer jump if he comes running from a distance as compared to that when he jumps suddenly. Identify the type of inertia.

       1. Inertia of rest
       2. Inertia of motion
       3. Inertia of direction
       4. Inertia of position

                                 Answer: 2

Question 15: 1 newton = _____

       1. $1 \, kg \, m/s$
       2. $1 \, kg m/s^2$
       3. $1 kg^2 \, m^2 / s^2$
       4. $1g$

                                 Answer: 2

Question 16: The physical quantity, which is equal to change in momentum, is

       1. Force
       2. Impulse
       3. acceleration
       4. Velocity

                                 Answer: 2

Question 17: The physical quantity, which is equal to rate of change of momentum, is

       1. displacement
       2. acceleration
       3. Force
       4. Impulse

                                 Answer: 3

Question 18: 1kg m/s = _____.

       1. 1 N s
       2. 1 N
       3. 1 N m
       4. 10 N s

                                 Answer: 1

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Question 19:   An example for a vector quantity is _____

                    1. Speed
                    2. momentum
                    3. distance
                    4. Length

                                                    Answer: 2

Question 20:   Impulse = _____.

                    1. ma
                    2. Ft
                    3. mv
                    4. $\dfrac{v - u}{t}$

                                                    Answer: 2

Question 21:   SI unit of impulse is _____.

                    1. $\dfrac{\text{N s}}{\text{N s}}$
                    2. N s^2
                    3. $kg\,m/s^2$
                    4. $kg\,m^2/s^2$

                                                    Answer: 1

Question 22:   The momentum of a toy bus of 0.01 kg moving with a velocity of 5 m/s is

                    1. 0.005 kg m/s
                    2. 0.05 kg m/s
                    3. 0.005 N s
                    4. 0.5 kg m/s

                                                    Answer: 2

Question 23:   The product of mass and velocity is known as _____.

                    1. acceleration
                    2. force
                    3. momentum
                    4. velocity

                                                    Answer: 3

Question 24:   What is the momentum of a man of mass 100 kg when he walks with a uniform velocity of 2 m/s?

                    1. $200\,kg\,m/s$
                    2. 200 N
                    3. $200\,kg\,m/s^2$
                    4. $50\,kg\,m/s$

                                                    Answer: 1

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Question 25:   The two factors on which the momentum of a body depends are _____ and _____.

> 1. velocity, time
> 2. mass, weight
> 3. mass, distance
> 4. mass, velocity

Answer: 4

Question 26:   The gravitational force of earth acting on a body of mass 1 kg is _____.

> 1. 8.9 N
> 2. 9.8 N
> 3. 980 N
> 4. 1 N

Answer: 2

Question 27:   Momentum of a massive object at rest is _____.

> 1. very large
> 2. very small
> 3. zero
> 4. none of the above

Answer: 3

Question 28:   The resultant of action and reaction forces is _____.

> 1. greater than zero
> 2. less than zero
> 3. zero
> 4. none of the above

Answer: 1