

# CLASS IX GUESS PAPER SCIENCE

## *Force and Laws of Motion*

1. The balanced forces can –
  - a. produce motion in a stationary body.
  - b. Stop a moving body.
  - c. Change the shape of a body.
  - d. All of the above.
2. To move a stationary object we have to push it with a force \_\_\_\_\_ than the opposing force of friction.
  - a. Greater
  - b. equal
  - c. less
  - d. none.
3. Which of the following is considered as a measure of the quantity of motion of a body –
  - a. Mass
  - b. force
  - c. momentum
  - d. weight
4. The pair of equal and opposite forces in Newton's third law of motion act –
  - a. always on same object.
  - b. always on the different object.
  - c. never on different objects.
  - d. either on same or on different objects.
5. The SI unit of force, newton is equivalent to which of the following –
  - a. kgm/s
  - b. kgm/s<sup>2</sup>
  - c. Nm<sup>2</sup>/kg<sup>2</sup>
  - d. N/m<sup>2</sup>.
6. The momentum of an object of mass m moving with a velocity v is-
  - a. mv<sup>2</sup>,
  - b. ½ mv<sup>2</sup>,
  - c. mv,
  - d. (mv)<sup>2</sup>.
7. Which of the following is not correct statement –
  - a. A force can move a stationary body.
  - b. A force can change the speed of a moving body.
  - c. A force can change the mass of a body.
  - d. A force can change the shape of a body.
8. On which of the following, the inertia of a body depends?
  - a. Mass,
  - b. weight,
  - c. velocity,
  - d. force.
9. What stands for p in p = m v?
  - a. power,
  - b. momentum,
  - c. pressure,
  - d. potential energy.
10. The force required to stop a moving body is directly proportional to –
  - a. mass,
  - b. velocity,
  - c. both mass and velocity,
  - d. neither mass nor velocity.
11. The quantity of motion in a body depends on the –
  - a. mass,
  - b. velocity,
  - c. both mass and velocity,
  - d. neither mass nor velocity.
12. A toy car of weight 200g is moving with a speed of 5m/s. its momentum is –
  - a. 1000kgm/s,
  - b. 1gm/s,
  - c. 1kgm/s,
  - d. none of them.
13. A ball of mass 500g is thrown vertically upwards with a speed of 10m/s. what would be its momentum at the highest point of its flight –
  - a. 5kgm/s,
  - b. 50gm/s,
  - c. 5000kgm/s,
  - d. none of them.

14. The force required to impart to a car a velocity of 30m/s in 10 sec starting from rest if the mass of the car is 1500kg is –
  - a. -4500N,
  - b. 4500N,
  - c. 45000N,
  - d. 450N.
15. The taken by a force of 10N to stop a mass of 2.5kg which is moving at 20m/s is –
  - a. 0.5 s,
  - b. 5 s,
  - c. 50 s,
  - d. 0.05 s.
16. A 150g ball travelling at 30m/s, strikes the palm of a player’s hand and is stopped in 0.05 s. The force exerted by the ball on the player’s hand is –
  - a. 9N,
  - b. 900N,
  - c. 90N,
  - d. 0.9N.
17. A vehicle weighing 2000kg has maximum acceleration  $0.5\text{m/s}^2$ . The maximum acceleration when it is carrying a load of 2000kg is –
  - a.  $25\text{m/s}^2$ ,
  - b.  $2.5\text{m/s}^2$ ,
  - c.  $0.25\text{m/s}^2$ ,
  - d.  $0.5\text{m/s}^2$ .
18. The momentum of object of mass 75g with uniform velocity of 2m/s is –
  - a. 150kgm/s,
  - b. 1.5 kgm/s,
  - c. 15 kgm/s,
  - d. 0.15 kgm/s.
19. The change in momentum of a body weighing 5kg when its velocity decreases from 20m/s to 0.20m/s is –
  - a. 9.9 kgm/s,
  - b. 99 kgm/s,
  - c. 0.99 kgm/s,
  - d. 0 kgm/s.
20. A bullet of mass 10g is fired from a gun of mass 3.5kg. On firing the bullet moves with a velocity of 350m/s. The total momentum of bullet and the gun before firing is –
  - a. 3.5 kgm/s,
  - b. 3.51 kgm/s,
  - c. 0.35 kgm/s,
  - d. 0 kgm/s.
21. Newton’s third law of motion which says that action and reaction are equal and opposite is based on –
  - a. conservation of momentum.
  - b. Conservation of mass,
  - c. Newton’s second law of motion.
  - d. Newton’s first law of motion.
22. A bullet of 10 g moving with a velocity of 400m/s gets embedded in a freely suspended wooden block of mass 900g. The velocity acquired by the block is –
  - a. 0.91 m/s,
  - b. 44 m/s,
  - c. 0.44 m/s,
  - d. 4.4 m/s.
23. The force acting on a body perpendicular to its surface is called –
  - a. momentum,
  - b. thrust,
  - c. pressure,
  - d. none of them.
24. The unit pascal is equivalent to – a.  $\text{N/M}^2$ , b.  $\text{NM}^2/\text{Kg}^2$  c. NM d. kgm/s.
25. The buoyant force of a liquid acting on a body depends –
  - a. Depends on volume of the solid object immersed in the liquid.
  - b. Depends on density of the liquid in which it is immersed.
  - c. Does not depend on the nature of the solid object immersed.
  - d. All of them.
26. The cause of buoyant force acting on a body immersed in a liquid is –
  - a. the greater upward force exerted by liquid on the bottom of body.
  - b. The smaller upward force exerted by liquid on the bottom of body.
  - c. The greater downward force exerted by liquid at the top of body.
  - d. The smaller downward force exerted by liquid at the top of body.
27. The depression is much more when a man stands on the cushion than when he lies down on it because
  - a. area is more.
  - b. pressure is more.
  - c. less area more pressure.
  - d. more area less pressure.
28. On which of the following, the magnitude of pressure depends.

- a. Weight,                      b. force,                      c. mass,                      d. none of them.
29. The maximum upward 'buoyant force' acts on an object when it is –  
a. completely immersed in water.                      b. floating on the surface of water.  
c. partially immersed in water.                      d. none of them.
30. The weight of a solid is –  
a. more in air,                      b. more in water,                      c. less in air,                      d. less in air, more in water.
31. The lactometers used for determining the purity of milk are based on –  
a. Archimedes' principle,                      b. buoyant force,                      c. density of milk,                      d. volume of milk.
32. The density of a substance increases with the –  
a. increase in volume,                      b. decrease in volume,                      c. decrease in mass,                      d. no change in volume.
33. The relative density of a substance is the ratio of its density to the –  
a. density of water,                      b. density of air,                      c. density of mercury,                      d. density of hydrogen.
34. Which of the following statements is incorrect –  
a. Density of water is  $1000\text{kg/m}^3$ .                      b. Relative Density of water is  $1\text{kg/m}^3$ .  
c. Density of water is  $1.0 \times 10^3\text{kg/m}^3$ .                      d. Relative density of water is 1

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