CLASS X (ICSE)
Subject: Physics
Topic-Force

SUMMARY –
FORCE, CONTACT AND NON-CONTACT FORCE, EFFECTS OF FORCE, UNITS OF FORCE
NEWTON'S LAWS OF MOTION, MOMENTUM , IMPULSE , EQUATIONS OF MOTION

SECTION -1 OBJECTIVE

Q1. Which of the following is an example of non-contact force?
1. Tension 2. Friction 3. Magnetic 4. Normal reaction

Q2. An unbalanced force can ……
1. Start a motion 2. Stop a motion
3. Change the shape and size 4. All of these

Q3. Inertia of the body depends on its
1. Acceleration 2. Momentum 3. Mass 4.Velocity

Q4. Slope of velocity – time graph gives
1. Velocity 2. Acceleration 3. Mass 4. Length

Q5. Area under the graph of velocity v/s time graph gives
1. Displacement 2. Acceleration 3. Mass 4. Length

Q6. A motor car running at the rate of 7m/s can be stopped by the brakes in 10m.Find the ratio of the total resistance to the motion (when the brakes are on) to the weight of the car.
1. 1 2. 0.25 3. 1 4. 25

Q7. A ball is thrown vertically upwards and reaches to a maximum height of 15m.Calculate the velocity with which the ball was thrown upwards.
1. 23m/ 2. 43m/s 3. 12m/s 4. 17m/s

Q8. A truck of mass 5x103 kg starting from rest travels a distance 0.5km in 10s when a force is applied on it. Find the force applied
1. 500 dyne 2. 50000 N 3. 50000 dyne 4. 500 N

Q9. How much acceleration will be produced in a body of mass 10kg acted upon by a force of 2Kgf?
1. 19.6 m/s2 2. 1.96 m/s2 3. 200 m/s2 4. 43.2 m/s2

Q10. A body has a mass of 10 kg than it weight is
1. 20N 2. 50N 3. 125N 4. 98N

SECTION - 2 SUBJECTIVE

Q1. Define force. Explain any two examples of contact and non-contact force.
Q2. Define the term linear momentum. State its units.
Q3. State Newton's laws of motion.
Q4. A car of mass 500g travels with a uniform velocity of 25m/s for 5s.The brakes are then applied and the car is uniformly retarded and comes to the rest in further 10s.Calculate:
The retardation
The distance which the car travels after the brakes are applied
The force exerted by the brakes.
Q5. A ball is dropped from the top of a tower 100m high and at the same time another ball is projected vertically upwards from the ground with a velocity of 25m/s. Find the height where the two balls will meet?

Q6. Define one Newton. State the relation between S.I unit and C.G.S unit of force.

Q7. (A) Name the device used for measuring (i) mass (ii) weight
(B) A body weighs 360N on the earth than what would be its approximate weight on the moon. Give reason for your answer

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Jitendra Kumar kanaujiya **mob.no.7081565539**

Solutions

TOPIC : Force

Objective Problems

1. (C) 2. (D) 3. (C) 4. (B) 5. (A) 6. (B) 7. (D) 8. (B) 9. (B) 10. (D)

Subjective Problems:

Q4. (a) 2.5m/s2

(b) 125m

(c) 1.25N

Q5. H = 21.6 (from the ground)

Q7. (A) (i) Beam balance or Physical Balance (ii) Spring balance

(B) 60N since gmoon = gearth /6