



CBQ
CLASS: IX
PHYSICS

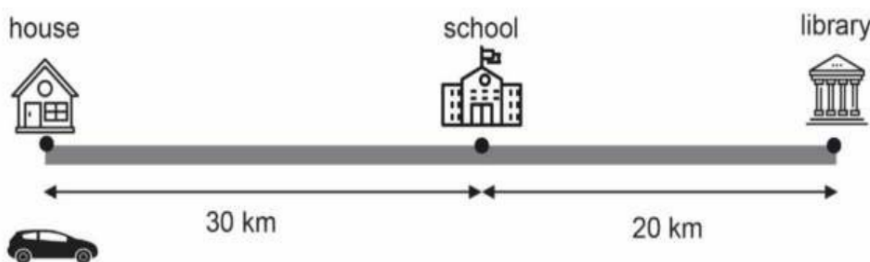
MOTION:

1. If a car is traveling north on a straight road and its brakes are applied, it will (a) have no acceleration (b) accelerate to the south (c) accelerate to the north (d) accelerate either east or west
2. A quantity has a value of -6.0 m/s . It may be the (a) speed of a particle (b) velocity of a particle (c) position of a particle (d) displacement of a particle

DIRECTION: In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as:

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
 - (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
 - (c) Assertion is true but reason is false.
 - (d) Both Assertion and Reason are false.
3. Assertion: the speedometer of a car measures the instantaneous speed of the car.
Reason: Average speed is equal to the total distance covered by an object divided by the total time taken.
 4. Assertion : An object may have acceleration even if it is moving with uniform velocity.
Reason : An object may be moving with uniform velocity but it may be changing its direction of motion.

The figure below shows the motion of a car along a straight path.
The car moves from house to school and school to library.
It then moves back to the school and stops.



5. What is the net displacement of the car?
A. 20 km
B. 30 km
C. 50 km
D. 70 km
6. What is the total distance travelled by the car?

The table below shows the speed of a bus in three hours of its travel.

	First hour	Second hour	Third hour
Speed of the bus	35 km/hr	60 km/hr	40 km/hr

- Calculate the average speed of the bus?

FORCE AND LAWS OF MOTION:

- Why action and reaction do not cancel each other?
- It is required to increase the velocity of a body of mass 80kg from 5m/s to 25m/s in 2s. Calculate the force required.
- How long should a force of 100N act on a stationary body of mass 20kg so that it acquires a velocity of 100m/s?
- Why do we tend to get thrown to one side when a motorcar makes a sharp turn at high speed?
- Assertion: The forces of action and reaction always appear due to actual physical contact of two bodies.
Reason: A particle can move only under the action of a force.
- Assertion: A table cloth cannot be pulled from a table without dislodging the dishes.
Reason : Newton's second law of motion gives the definition of inertia.

A man pushes four boxes of different mass.
The table shows the acceleration produced for each box during the push.

Mass of the box (kg)	Acceleration produced (m/s^2)
10	200
20	100
40	50
80	25



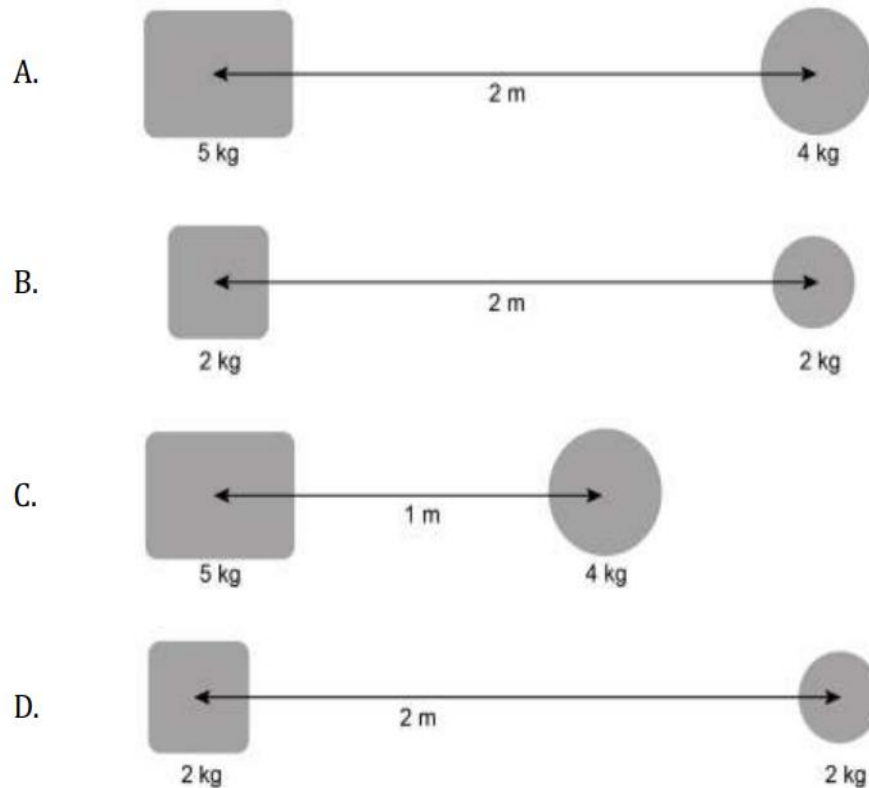
- What amount of force does the man exert on each box? Show the calculation.
- Is the force acting on each box unbalanced? Explain your answer.
- Which of these represent a balanced force?
 - A boy sitting on a chair
 - An object sinking in water
 - An apple falling from a tree
 - A magnet attracting an iron nail

GRAVITATION:

- Newton's law of gravitation is valid
 - on the earth only
 - on the moon only
 - in the laboratory only
 - everywhere
- The value of G was first determined experimentally by
 - Newton
 - Henry Cavendish
 - Kepler

(d) Galileo

3. In Newton's Law of Gravitation, what does G stand for? What is its numerical value?
4. Assertion: Universal gravitational constant G is a scalar quantity.
Reason: The value of G is the same throughout the universe.
5. Which pair of objects will have the strongest force of gravity between them?



6. Calculate the force of attraction between 2 blocks, each of mass 40kg, which are 1m apart.
7. How does the force of gravitation between two objects change when the distance between them is reduced to one-fourth?