APPENDIX

ACHIEVEMENT TEST

CLASS - 9th

Subject – SCIENCE

Topic – FORCE AND LAWS OF MOTION

TIME - 1 HOUR   **MAX MARKS – 40**

Please fill the following informations: Date - ☐☐☐☐☐☐☐

Name-_____   Age-_____years

Gender- Male ☐   Female ☐   Class-_____

Name of the school-_____

NOTE – All questions are compulsory.

1. Fill in the blanks.   1*5=5marks

    a. Rocket works on the principle of conservation of _____.

    b. A person in a car tends to fall back when it suddenly starts. It is due to inertia of _____.

    c. A 10N force applied on a body produces in it an acceleration of 2m/s^2. The mass of the body is _____.

    d. When a running horse suddenly stops, the rider falls _____.

    e. A gun recoils after firing to conserve _____.

2. Read the terms/situations given in column A and B carefully and match the two.

                                                                    1*5=5marks

Column A	Column B	
(a) Push	(i)	A ball rolling down from incline plane
(b) Stretch	(ii)	Taking out a book from a table drawer
(c) Acceleration	(iii)	Hitting a ball with bat
(d) Pull	(iv)	Extending rubber band
(e) Change in direction	(v)	Opening a door to get into a room

3. Multiple choice questions.   1*5=5marks

  a. Inertia is a measure of

  I)   Mass (II)   velocity   (III) Force   (IV)   acceleration

  b. An object of mass 2 kg is sliding with a constant velocity of 4 m/ s on a frictionless horizontal table. The force required to keep the object moving with the same velocity is –

  I)   0 N   (II)   2N   (III) 32N   (IV) 8N

  c. The object shown below moves with constant velocity. Two forces are acting on the object. Considering negligible friction, the resultant force will be –
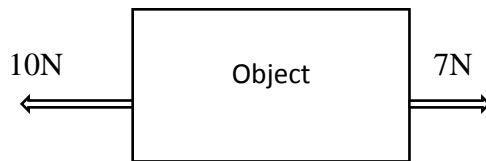
  I)   3 N leftwards (II)7N rightwards (III)17 N leftwards (IV)10 N leftwards

  d. There will be a change in the speed or in the direction of motion of a body when it is acted upon by –

  I)   An Unbalanced force   (II)   Balanced Force

  III)   Uniform force   (IV)   Zero Force

  e. When two bodies A and B interact with each other, A exerts a force of 10N on B towards east. What is the force exerted by B on A?

  I)   A exerts 10N force on B towards West

  II)   B exerts 20N force on A towards East

  III)   B exerts 10N force on A towards West

  IV)   A exerts 20N force on B towards East

4. Select whether the given statement is true or false –   1*5=5marks

  a. The property of inertia is more in a truck than a toy car.

  b. When a body is stationary there is no force acting on it

  c. Force and momentum are scalar quantities.

  d. From Newton's third law, action and reaction acts on different bodies.

  e. The relation between force (F), mass (m) and acceleration (a) is F=ma.

5. Answer the following questions in one word/sentence only.   2*5=10marks

   a. A car is moving with velocity of 10 ms^{-1} whose mass is 1500 kg. Find the momentum of the car.
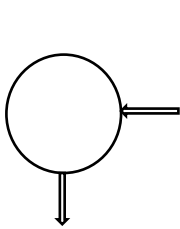
     Ans. = _____

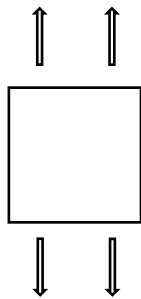   b. If 120N of force is acting on a body with 20kg mass, then find it's acceleration.

     Ans. = _____

   c. Complete the statement of the first law of motion. "A body at rest stays at _____ and a body in motion stays in _____ unless an _____ force is applied."

   d. Which cases are showing the situation of balanced force? (all arrows represent same magnitude of force)
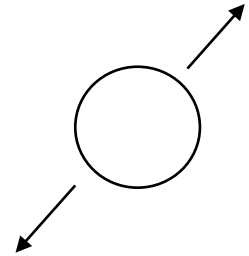

    A   **B**   **C**   **D**

     Ans.=_____

   e. What force is required to produce an acceleration of 4m/s^2 in an object of mass 2kg?

     Ans. = _____

6. A bullet of mass 20 gram is fired from a 5kg gun with a velocity of 500m/s, find the speed of recoil of the gun?   5 marks

7. Write the statement of Newton's second law of motion and derive the relation F=ma.

        5 marks

Space for rough work: -