CONCEPT APPLICATION LEVEL - I [NCERT Questions]

SECTION-A

Q.1 Give two examples of each of situation in which you push or pull to change the state of motion of objects.

Ans. (i) We push a bicycle to move it.
(ii) We pull the table to change its position.

Q.2 Give two examples of situations in which applied force causes a change in the shape of an object.

Ans. (i) When we press the foam, its shape is changed.
(ii) When we stretch the rubber band, its shape is changed.

Q.3 Fill in the blanks.

(a) To draw water from a well we have to _____ at rope.
(b) A charged body _____ an uncharged body towards it.
(c) To move a loaded trolley we have to _____ it.
(d) The north pole of a magnet _____ the north pole of another magnet.

Ans. (a) pull (b) attracts (c) push (d) repels

Q.4 An archer stretches her bow while taking aim at the target. She then releases the arrow, which begins to move towards the target. Based on this information fill up the gaps in the following statements using the following terms:

muscular, contact, non-contact, gravity, friction, shape, attraction

(a) To stretch the bow, the archer applies a force that causes a change in its _____.
(b) The force applied by the archer to stretch the bow is an example of _____ force.
(c) The type of force responsible for a change in the state of motion of the arrow is an example of a _____ force.
(d) While the arrow moves towards its target, the forces acting on it are due to _____ and that due to _____of air.

Ans. (a) shape (b) muscular (c) contact (d) gravity, friction

Q. 5 In the following situations identify "the agent exerting a force and the object on which it acts. State the effect of the force in each case.

(a) Squeezing a piece of lemon between the fingers to extract its juice.
(b) Taking out paste from a toothpaste tube.
(c) A load suspended from a spring while its other end is on a hook fixed to a wall.

Ans. (a) The fingers are the agents, lemon is the object. The effect of force is the lemon juice being expelled by squeezing.
(b) The hand is the agent, toothpaste tube is object and the coming out of paste from toothpaste tube is the effect of force.
(c) Suspended load is agent, spring is the object, the effect of force can be seen in the form of elongation of spring on suspension of load.

Q.6 A blacksmith hammers a hot piece of iron while making a tool. How does the force due to hammering affect the piece of iron?

Ans. The force due to hammering causes the change in shape of iron and iron can be moulded in the shape of the required tool.

Q.7 An inflated balloon was pressed against a wall after it has been rubbed with a piece of synthetic cloth. It was found that the balloon sticks to the wall. What force might be responsible for the attraction between the balloon and the wall?

Ans. Electrostatic force.

Q.8 Name the forces acting on a plastic bucket containing water held above ground level in your hand. Discuss why the forces acting on the bucket do not bring a change in its state of motion.

Ans. Muscular and gravitational forces act on plastic bucket. The force acting on the bucket do not bring a change in state of motion because they are acting in opposite direction with equal magnitudes. Therefore the net force on bucket remains zero.

Q. 9 A rocket has been fired upward to launch a satellite in its orbit. Name the two forces acting on the rocket immediately after leaving the launching pad.

Ans. (i) Gravitational force
(ii) Force of friction.

Q.10 When we press the bulb of a dropper with its nozzle kept in water, air in the dropper is seen to escape in the form of bubbles. Once we release the pressure on the bulb, water gets filled in dropper. The rise of water in the dropper is due to

(A) pressure of water **(B) gravity of the earth**
(C) shape of rubber bulb **(D) atmospheric pressure**

Ans. (D) atmospheric pressure.

SECTION-B

- **FILL IN THE BLANKS**

Q.1 Fill in the blanks in the following statements: **[NCERT]**

(1) The pull or push is called _____.
(2) Force of friction is an example of _____ force.
(3) The wear and tear in the machine parts is due to _____ .
(4) Force acting due to action of muscles is called _____.
(5) The force exerted per unit area is called _____.
(6) A force applied on an object may change its _____.
(7) Force has _____ as well as _____.
(8) Force _____ is called pressure.
(9) Water in rivers flows _____ due to the force of gravity.
(10) A _____ or a _____on an object is called force .
(11) An object _____with another object results in a force between the two objects.
(12) A force applied on an object causes either a change in it's _____of _____or its _____.
(13) Magnetic force is a _____force.

- **TRUE/FALSE (Write True / False against each statement)**

Q.1 Force of friction is an example of non-contact force.
Q.2 If two forces act in opposite directions on an object, the net force is the difference between the two forces.
Q.3 The forces of friction can be reduced by using lubricants.
Q.4 The force exerted per unit area is called magnitude.
Q.5 A force can change the state of motion of an object.
Q.6 Muscular force is a kind of Contact force.
Q.7 Force of gravity is contact force.
Q.8 At least two objects must interact for a force to come into play.
Q.9 Pascal is the unit of force.
Q.10 To move an object faster it has to be pushed or pulled repeatedly
Q.11 Forces applied on an object in the same direction add to one another.
Q.12 Forces applied on an object in the opposite directions add to one another.
Q.13 Force can change the shape of an object.
Q.14 Muscular force is type of non-contact force.

SECTION-C

- **MULTIPLE CHOICE QUESTION WITH ONE CORRECT ANSWERS**

Q.1 A batsman hits a cricket ball which then rolls on the level ground. After covering a short distance the ball comes to rest. The ball stops due to
(A) magnetic force (B) frictional force (C) gravitational force (D) muscular force

Q.2 When two forces applied on an object are equal and opposite, then these forces
(A) may move the object.
(B) may stop a moving object.
(C) may move the object and also cause a change in its shape.
(D) do not move the object but may cause a change in its shape.

Q.3 When two unbalanced forces act on a body, in opposite directions, the net force is equal to
(A) the sum of the individual unbalanced forces.
(B) zero.
(C) difference between the two unbalanced forces and is in the direction of the larger force.
(D) difference between the two unbalanced forces and is in the direction of smaller force.

Q.4 Nails have pointed ends. This results in
(A) a decrease in the force exerted on them.
(B) a decrease in the effect of the force exerted on them.
(C) an increase in the force exerted on them.
(D) an increase in the effect of the force exerted on them.

Q.5 Which of the following is an example of contact force?
(A) Magnetic force (B) Muscular force (C) Electrostatic force (D) Gravitational force

Q.6 Fruits falling from trees is an example of
(A) Gravitational force (B) Muscular force (C) Frictional force (D) Electrostatic force

Q.7 The unit of measuring pressure is
(A) newton (B) newton / metre^2 (C) metre^2 (D) metre^2 / newton

Q.8 In liquids, the pressure
(A) increases with depth (B) decreases with depth
(C) remains same at all depths (D) sometimes increases sometimes decreases

Q.9 During dry weather, rubbing a plastic scale with dry hair, attracts small pieces of paper. This is due to
(A) gravitational force (B) electrostatic force (C) frictional force (D) muscular force

Q.10 Force is a
(A) Pull (B) Push (C) Pull and push both (D) None of these.

Q.11 The strength of force is expressed by
(A) Weight (B) Mass (C) Magnitude (D) Longitudinal force.

Q.12 The force between two charged bodies is called
(A) Muscular force (B) Gravitational force (C) Magnetic force (D) Electrostatic force.

Q.13 State of motion is described by
(A) Position of rest (B) Position of motion
(C) Both by the state of rest or motion (D) None of these.

Q.14 Magnetic force is
(A) Contact force (B) Non-contact force (C) both (A) and (B) (D) None.

Q.15 Force acts on an object may change
(A) Direction (B) Shape (C) Speed (D) All of above.

Q.16 The net force on an object is zero if the two forces acting on it in
(A) Opposite direction
(B) Same direction
(C) Sometimes opposite sometimes same direction.
(D) All of above.

Q.17 Leaves or fruits fall on the ground due to
(A) Magnetic force (B) Gravitational force (C) Electrostatic force (D) Muscular force

Q.18 Force can affect the state of motion of a body by changing
(A) direction or speed (B) increasing speed
(C) decreasing speed (D) all of the above

Q.19 The pressure exerted by the atmospheric air is known as
(A) atmospheric pressure (B) biosphere
(C) troposphere (D) all of these

Q.20 In an aneroid barometer, the liquid used is
(A) water (B) mercury (C) alcohol (D) no liquid

Q.21 A wooden piece 5 N in weight and 5 cm × 3 cm × 2 cm in size lies on 5 cm × 2 cm face. The pressure exerted by it in N per cm^2 is
(A) 150 (B) 50 (C) 0.5 (D) 15

Q.22 Pressure is
(A) volume/area (B) force/area (C) mass/area (D) density/area

Q.23 Force acting on a surface in a direction perpendicular to it is known as
(A) thrust (B) force (C) pressure (D) density

Q.24 Which is not the non-contact force?
(A) Electrostatic force (B) Magnetic force (C) Force due to gravity (D) Muscular force

Q.25 Force exterted during digestion of food is
(A) force of gravity (B) pressure (C) muscular force (D) longitudinal force

Q.26 The standard unit of force is
(A) metre/second (B) newton (C) metre/second^2 (D) gram/weight

Q.27 The force exerted by animal body is called
(A) muscular force (B) mechanical force (C) gravitational force (D) magnetic force

Q.28 1 kilogram weight is
(A) 98 N (B) 9.8 N (C) 0.98 N (D) 0.098 N

Q.29 A spring balance is used for measuring
(A) mass (B) weight (C) pressure (D) speed

Q.30 The force exerted by one object on another by virtue of their masses is
(A) magnetic force (B) electrostatic force (C) gravitational force (D) frictional force

Q.31 If a rock is brought from the surface of the moon
(A) its mass will change
(B) its weight will change, but not mass
(C) both mass and weight will change
(D) its mass and weight will remain the same

Q.32 When an object undergoes acceleration
(A) its speed always increases
(B) its velocity always increases
(C) its always falls towards the earth
(D) a force always acts on it

Q.33 External forces are :
(A) always balanced
(B) never balanced
(C) may or may not be balanced
(D) none of these

Q.34 The net force acting on a body of mass 1 kg moving with a uniform velocity of 5 ms^{-1} is
(A) 5 N (B) 0.2 N (C) 0 N (D) None of these

Q.35 How many dynes are equal to 1 N?
(A) 10^6 (B) 10^4 (C) 10^5 (D) 10^3

Q.36 A force can :
(A) change the direction of a moving body
(B) change the state of rest or uniform motion of a body
(C) change the shape of a body
(D) all of the above

Q.37 The SI unit of pressure is :
(A) Newton (B) Dyne/cm^2 (C) Pascal (D) Joule

Q.38 Which among the following will exert maximum pressure when pushed with the same amount of force?
(A) An eraser of area 2 cm^2 (B) A sharpened pencil tip
(C) The blunt end of a pencil (D) The rear portion of a closed safety pin

Q.39 When a force is applied over a larger area, the pressure produced will
(A) increase (B) decrease (C) both (A) and (B) (D) None of these

Q.40 Pressure is also measured in
(A) joule (B) mm of Hg (C) mm of Ag (D) meter

Q.41 Force per unit area is called
(A) energy (B) work (C) pressure (D) thrust

Q.42 Atmospheric pressure is measured by
(A) barometer (B) manometer (C) screw gauge (D) none of these

Q.43 A manometer is used to measure
(A) height (B) pressure (C) liquid density (D) atmospheric pressure

Q.44 How does pressure vary as we come from mountain top to sea level?
(A) increases (B) decreases (C) remains same (D) depends on weather

Q.45 As we go deeper beneath the surface of a liquid, the pressure
(A) remains same (B) increases (C) decreases (D) depends on weather

Q.46 A vacuum cleaner work on the principle of
(A) Electro magnetic Indication (B) Suction
(C) Mutual Induction (D) Energy conservation

Q.47 Which of the following is true?
(A) If an object moves 6 m in 2 second then its speed is zero
(B) When an object moves 10 m in 3 second then its speed is 30 m/s
(C) Speed = Velocity × Distance
(D) When an object moves 12 m in 4 second then its speed is 3 m/s

Q.48 In which of the following case you are not applying any force on a chair?
(A) When you are sitting on the chair
(B) When you are pulling the chair but it is not moving
(C) When you are pushing the chair and it is moving
(D) When you are just seeing the chair

Q.49 Distance is measured in:
(A) Force (B) Second (C) Length (D) Metre

Q.50 SI unit of force is:
(A) Newton (B) Dyne (C) Joule (D) m/s^2

Q.51 A man is running on the ground. Which of the following is not true?
(A) Man is applying force on the ground (B) The ground is applying force on the man
(C) The air is not applying any force on the man (D) The air is applying some force on the man

Q.52 Which of the following comes with a movement only?
(A) Force (B) Mass (C) Speed (D) Time

Q.53 When you push a tree?
(A) The tree also pushes you (B) The tree pulls you
(C) The tree neither push nor pull it is at rest (D) The tree pushes when you stop pushing it

Q.54 The SI unit of speed is:
(A) km/hr (B) m/s (C) length/second (D) distance/second

Q.55 Which force enables us to perform all activities involving movement or bending of our body?
(A) Contact force (B) Non-contact force (C) Muscular force (D) Gravitational force

Q.56 The cause responsible for changing the state of motion of objects is called:
(A) inertia (B) pressure (C) velocity (D) force

Q.57 The force exerted by a magnet is an example of;
(A) Contact force (B) Non-contact force (C) Gravitational force (D) Muscular force

Q.58 Wind is a kind of
(A) Contact force (B) Non contact force
(C) Action at a distance force (D) None of these

Q.59 Gravitational force is
(A) Contact force (B) Repulsive force (C) Attraction force (D) None of these

Q.60 A force
(A) can change the shape and size of object (B) can be seen
(C) is a scalar physical quantity (D) none of these

Q.61 Which of the following class of forces is different from others?
(A) Magnetic force (B) Electrostatic force
(C) Gravitational force (D) Stretching of a spring

Q.62 A contact force cannot act through
(A) Empty space (B) Touching
(C) Touching with metal rod (D) Touching with wooden rod

Q.63 Density is equal to

(A) $\frac{\text{volume}}{\text{mass}}$ (B) $\frac{\text{mass}}{\text{weight}}$ (C) $\frac{\text{mass}}{\text{volume}}$ (D) mass×volume

Q.64 Frictional force can't be measured in
(A) kg weight (B) newton (C) dyne (D) kg ms^{-1}

Q.65 1 Dyne is equal to
(A) 98 g weight (B) 1/980 g weight (C) 980 g weight (D) none of these

Q.66 Pressure cannot be measured in
(A) Nm^{-2} (B) Bar (C) Pa (D) kg weight

Q.67 The atmospheric pressure at the surface of the earth is about
(A) 10^3 Nm^{-2} (B) 10^5 Nm^{-2} (C) 10^{-3} Nm^{-2} (D) 10^{-5} Nm^{-2}

Q.68 Pascal is the unit for
(A) Pressure (B) Thrust (C) Boyant force (D) None of these

Q.69 At sea level, atmospheric pressure is
(A) 76 cm of Hg column (B) 7.6 cm of Hg column
(C) 0.76 cm of Hg column (D) 76 cm of water column

Q.70 The pressure exerted by a liquid of height h is given by (symbols have their usual ?)
(A) h/dg (B) hdg (C) h/d (D) hg

Q.71 The density of water is
(A) 10^{-3} kg m^{-3} (B) 10^{-2} kg m^{-3} (C) 10^2 kg m^{-3} (D) 10^3 kg m^{-3}

Q.72 The hot air balloon rises because it is
(A) denser (B) less dense
(C) equally dense (D) the given statement is wrong

Q.73 1 millibar is equal to
(A) 100 Nm^{-2} (B) 100 N/m^{-2} (C) 1 Nm^{-2} (D) 1/100 Nm^{-2}

SECTION-D

- **MATCHING SKILLS :**

Q.1 Match the items given in Column A with those in Column B suitably

	Column-A		**Column-B**
(i)	Force	(a)	Non-contact force
(ii)	Contact force	(b)	Force on a unit area
(iii)	Magnitude	(c)	Push or pull
(iv)	Force of gravity	(d)	Muscular force
(v)	Pressure	(e)	Strength of force

Q.2 Match the items given in Column A with those in Column B suitably

	Column-A		**Column-B**
(i)	Gravity	(a)	Unit area
(ii)	Pressure	(b)	Non-contact force
(iii)	Muscular force	(c)	Pull or push
(iv)	Force	(d)	Contact force

Q.3 Match the items given in Column A with those in Column B suitably

	Column -A		**Column-B**
(i)	Electrostatic force	(a)	Pressure
(ii)	Thrust per unit area	(b)	Atmospheric pressure
(iii)	Push or pull on object	(c)	Vertically downward
(iv)	Pascal	(d)	Contact force
(v)	Pressure in all direction	(e)	Moving objects
(vi)	Force due to gravity act	(f)	Unit of pressure
(vii)	Muscular force	(g)	Force
(viii)	Force of friction acts on	(h)	Non-contact forces