_____

- *Answers to this Paper must be written on the paper provided separately.*
- *You will **not** be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is time allowed for writing the answers.*
- ***Section I is compulsory. Attempt **any four** questions from **Section II**.**
- *The intended marks for questions or parts of questions are given in brackets [ ].*
- *Section I is of 40 M. Section II is of 40 M.*
- *This paper consists of [7] number of pages.*

_____

## SECTION I

### (Attempt ALL questions from this section)

**Question 1. Choose the correct answers to the questions from the given options.**                 [15]

**(Do not copy the question, write the correct answers only.)**

**(i) body is dropped from top of tower. The quantity which remains constant is:**

(a) Displacement
(b) Speed
(c) Velocity
(d) Acceleration

**(ii) A bullet initially moving with a velocity 20 m/s strikes a target and comes to rest after penetrating a distance 10 cm in the target. The retardation caused by the target is:**
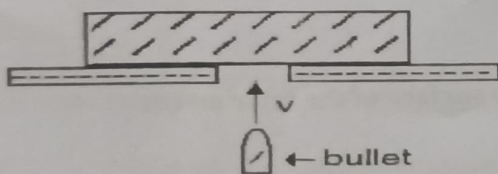


(a) 2000 m/s$^2$
(b) 2550 m/s$^2$
(c) 3000 m/s$^2$
(d) 4500 m/s$^2$

**(iii) Slope of displacement v/s time graph is:**

(a) Velocity
(b) Displacement
(c) Acceleration
(d) Time

**(iv)** The shortest path travelled by any object is:

(a) Distance
(b) Displacement
(c) Velocity
(d) Acceleration

**(v)** Unit of density is:

(a) kg-m/s
(b) N-m
(c) J/s
(d) None of these

**(vi)** A body of density $\rho$ sinks in a liquid of density $\rho_L$. The densities $\rho$ and $\rho_L$ are related as:

(a) $\rho = \rho_L$
(b) $\rho < \rho_L$
(c) $\rho > \rho_L$
(d) Nothing can be said.

**(vii)** An empty tin container with its mouth closed has an average density equal to that of liquid A. The container is taken 2 m below the surface of liquid A and is left there. Then:

(a) Container will bounce back to the surface.
(b) Container remains where it is left.
(c) Container sinks further.
(d) Nothing can be said.

**(viii)** Two balls, one of iron and other of aluminium experience same up thrust when dipped in water if:

(a) Both have equal volume
(b) Both have equal weight in air
(c) Both have equal density
(d) Nothing definite can be said

**(ix)** A book of weight 10 N is placed on a table. The force exerted by the surface of the table on the book will be:

(a) Zero
(b) 10 N
(c) 20 N
(d) None of these

**(x)** Assertion: A man could swim in river

Reason: A man could swim in river because of Newton's third law of motion

(a) both assertion and reason are true.
(b) both assertion and reason are false.
(c) assertion is false but reason is true.
(d) assertion is true reason is false.

(xi) China and glass wares are packed with soft material when transported. This is done to:

(a) Increase impulse
(b) Reduce Impulsive force
(c) For cost cutting
(d) None of these

(xii) **The diameter of the wire can be accurately measured by**

(a) Vernier calipers
(b) meter rule
(c) A screw gauge
(d) any of these

(xiii) **1AU (Angstrom unit) is equal to**

(a) 0.1nm
(b) 10cm
(c) $10^{-8}$m
(d) $10^{-4}\mu$

(xiv) **The time in which the moon completes 1 revolution around the earth is called**

(a) Leap year
(b) Solar day
(c) Lunar month
(d) None

(xv) **1 light year is the unit of**

(a) Mass
(b) Distance
(c) Time
(d) Force

## Question 2

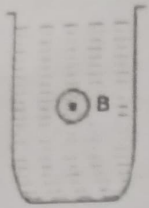(i) (a) Name the principle on which Hydraulic press works. [3]

(b) Name two more examples of Hydraulic machines which works on same principle.

(c) How principle of a hydraulic machine works?

(ii) A small stone of mass m (=200g) is held under water in a jar and is allowed to fall as shown in fig. the forces acting on stone are also shown. [3]

(a)    What does F2 represent?

$F_2 = m_1 g$

B

(b) What does m1 represent?

(c) What is the net force acting on stone?

$F_1 = mg$
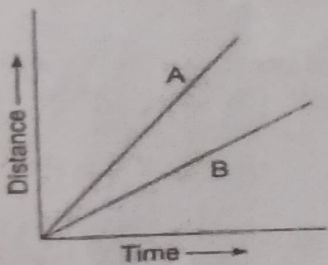
[3]

(iii) Write the derived units of the following:
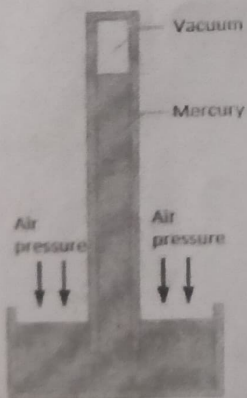
(a) Acceleration

(b) momentum

(c) Pressure

[2]

(iv) Select the scalars and vectors from the following:

Velocity, distance, acceleration, work, mass, retardation

(v)The following graph shows the motion of two cars A and B. Which one of them is moving faster? Give reason to your answer.

[2]



(vi) Identify the instrument shown in picture. Write one use of it.

[2]



## Question 3

(i) (a) Arrange the following in increasing order of their relative densities: Iron, air, water

[2]

(b) The relative density of a substance is greater than 1. What does it signify?

(ii) Differentiate between Contact Forces and Non-contact Forces on the basis of Definition and Types of forces included in it. [2]

(iii) A block of weight 25 N is hanging from a rigid support by a string. What force is exerted by [2]

(a) Block on the string
(b) String on the block



wire ——————

25.0 N
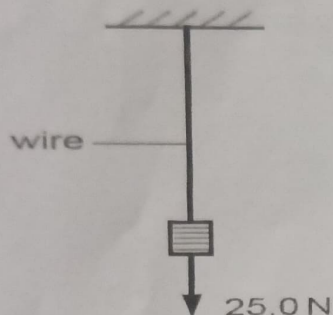
(iv) Derive the following equation for a uniformly accelerated motion, [2]

$V^2 = u^2 + 2aS$

(v) What is second's pendulum? What is the effective length of the second's pendulum, at a place where g = 9.8 ms$^{-2}$ ? [2]

## SECTION II

### (Attempt any four questions)

### Question 4

(i) (a) Draw a diagram to show two forces acting on an object floating half immersed in a liquid. [2]
(b) What do you mean by buoyancy? [1]

(ii) (a) A rubber ball floats on water with its 1/3 rd volume outside water. What is the density of rubber? [2]

(b) What is Relative density? [1]

(iii) (a) State two characteristic properties of upthrust. [4]

(c) An unloaded ship is filled with sand at its bottom.

### Question 5

(i) (a) If you swim beneath the surface in salt water, will the pressure be greater than in fresh water at the same depth? Give reason for your answer. [2]

(b) Why the pressure of the atmosphere does not break glass windows? [1]

(ii) Obtain an expression for the pressure at a depth inside a liquid. [3]

(iii) A man weighs 880 N at the equator. [2]

(a) Calculate his mass. (g = 10 m/s$^2$)
(b) How will his weight change if taken to the poles?

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(iv) An object is weighed using a spring balance in air and in vacuum. In which medium will the weight of the object be more? [2]

**Question 6**

(i) Name and define three different types of inertia. [3]

(ii) (a) Define Newton's second law of motion. [1]

(b) A man pushes a box of mass 40 kg with a force of 150 N. What is the acceleration produced in the box due to this force? [2]

(iii) Explain Why? [4]

    (a) A ball rebounds after striking a hard floor.
    (b) A luggage is usually tied with a rope on the roof of the bus or car.

**Question 7**

(i) (a) Differentiate between Speed and Velocity. [2]

    (b) Express the speed 36 km h$^{-1}$ in m s$^{-1}$. [1]

(ii) (a) A train takes 3 h to travel from Agra to Delhi with a uniform speed of 65 km h$^{-1}$. Find the distance between two cities. [2]

(b) State Newton's law of gravitation. [1]

(iii) The following table represents the distance of a car at different instants in a fixed direction.

| Time (s)      | 0 | 1  | 2  | 3  | 4  | 5  |
|---------------|---|----|----|----|----|----|
| Distance (m)  | 0 | 10 | 20 | 30 | 40 | 50 |

    (a) Draw displacement-time graph and with its help, find whether the motion of car is uniform or non-uniform? [2]

    (b) Use graph to calculate: [2]
        A. The velocity of a car
        B. The displacement of car at t=2.5 s and t=4.5 s.

**Question 8**

(i) (a) Write principle on which screw guage works. [1]

(b) Write function of Sleeve and Thimble of screw guage. [2]

(ii) (a) Explain the meaning of derived unit with the help of one example. [2]

(b) What is simple pendulum? [1]

(iii) State how does the time period of a simple pendulum depend on, [4]

Length of pendulum, mass of bob, amplitude of oscillation, acceleration due to gravity

6

## Question 9

(i) A car acquires a velocity of 72 km h$^{-1}$ in 10s starting from rest. Calculate: [3]

    (a) The acceleration
    (b) The average velocity
    (c) The distance travelled in this time

(ii) With the help of graphical method derive the expression $v = u + at$ [3]



(a) Longest side vertical    (b) Shortest side vertical
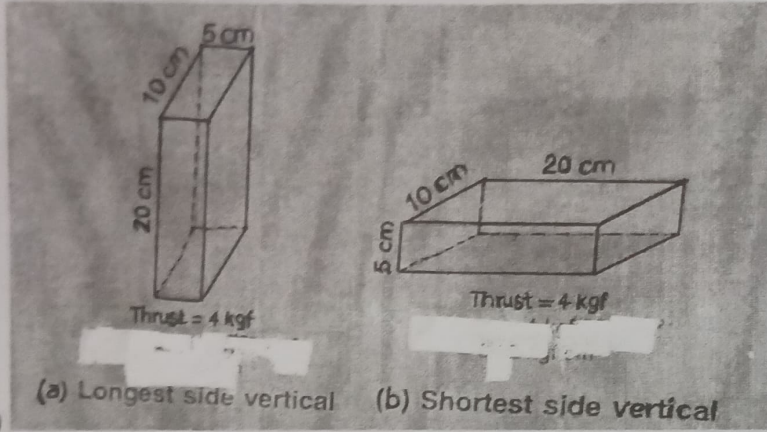
(iii) [4]

Which brick will exert maximum pressure on ground with longest side or shortest side? Solve and explain.

**Sub: Physical Education**

Time: 2Hrs

Marks: 100

- Answers to this paper must be written on the paper, provided separately.
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- The time given at the head of this paper is the time allowed for writing the answers.
- The intended marks for questions or parts of questions are given in brackets.
- Answer all the questions from Section A
- Answer all the questions from Section B

## (Section – A)

**Question 1. Choose the correct answer & write the correct option.**

1) A muscle on the front part of the upper part

a) Triceps     b) Pectorals     c) Deltoid     d) Biceps      [1]

2) Which of the following is part of the human respiratory system?

a) Gluteal     b) Biceps     c) Triceps     d) Trachea      [1]

3) A muscle located on the back portion of lower leg.

a) Biceps     b) Gastrocnemius     c) Triceps     d) Deltoid      [1]

4) Decrease in the angle between two body parts.

a) Abduction     b) Adduction     c) Flexion     d) Extension      [1]

5) How many types of muscles are there in the body?

a) 2     b) 4     c) 3     d) 1      [1]

6) Maximum volume of air that can be inhaled & exhaled during forced breathing.

a) Tidal volume     b) Second wind     c) Oxygen debt     d) Vital capacity      [1]

7) It is a movement away from the midline of the body.

a) Abduction     b) Adduction     c) Extension     d) Rotation      [1]

8) A rounded, triangular muscle located on the uppermost part of the arm & top of the shoulder.

a) Pectoral     b) Biceps     c) Triceps     d) Deltoid      [1]

9) The main passageway into the lungs.

a) Pharynx     b) Bronchi     c) Larynx     d) Trachea      [1]

10) Muscle that you can't control.

a) Involuntary     b) Voluntary     c) Strain     d) Sprain      [1]

**Question 2. Match the following.**

| (A) | (B) | |
|---|---|---|
| | | [5] |
| 1) Ball & socket joint | a) Involuntary | |
| 2) Skeletal muscle | b) Elbow & knee joint | |
| 3) Smooth muscles | c) Shoulder & hip joint | |
| 4) Hinge joint | d) Not require enzymes | |
| 5) Breathing | e) Voluntary | |

**Question 3. Fill in the blanks**

1) The "sternum" is a very important bone that protects the _____.                                     [1]

2) The wind pipe is also called the _____.                                     [1]

3) The _____ muscles are located between the ribs &amp; the pelvis on the front of the body.     [1]

4) The _____ is a sheet of muscular tissue, which normally remains arched upward like a dome, towards the base of lungs.                                     , [1]

5) The skull is composed _____ number of bones.                                     [1]

**Question 4**

A) What do you understand by human skeletal system?

B) State any three functions of the skeletal system?                                     [2]

C) Define joints.                                     [3]

D) What is the difference between an endoskeleton and exoskeleton?                                     [2]

**Question 5**                                     [3]

A) What is muscle contraction?

B) State & explain any three benefits of exercises on the muscular system.                                     [2]

C) Name the four muscles of gluteal.                                     [3]

D) What is difference between isometric and isotonic muscle contraction.                                     [2]

**Question 6**                                     [3]

A) Define Anoxia.

B) Differentiate between aerobic & anaerobic respiration.                                     [2]

C) Define Respiration.                                     [3]

D) State any three benefits of exercise on the respiratory system.                                     [2]

[3]

2

## FOOTBALL

**Question 7**

A) Write short note on.

   i) Zonal marking [8]

   ii) Technical area

   iii) Advantage

   iv) Wall pass

B) i) Name any three fundamental skills of football.

   [9]

   ii) Write any three occasions when the ball is said to be out of play in the game of football.

   iii) When is a goal kick awarded and from where is it taken?

C) Write the following.

   [8]

   i) Height of the corner flag.

   ii) Height and width of the goal post.

   iii) Weight and circumference of the football.

   iv) Minimum & maximum number of players required to start a football match.

**Question 8**

A) **Explain the following terms in football**

   i) Offside [8]

   ii) Throw-in

   iii) Indirect free kick

   iv) Additional time

B) i) How many substitutes are allowed in football match?

   [9]

   ii) State any three ways of restarting the play.

   iii) State any three fouls for which the referee can show a Red Card to the player.

C) Draw a neat & labeled diagram of a football field showing the following measurements. [8]

   i) Length and breadth

   ii) Penalty area

   iii) Goal area

   iv) Penalty mark

   v) Penalty arc

   vi) Centre circle

   vii) Corner arc