Roll No. ☐☐☐☐☐☐   Answer Sheet No._____

Sig. of Candidate._____   Sig. of Invigilator._____

PHYSICS SSC–I

SECTION – A (Marks 12)

Time allowed: 20 Minutes

NOTE:- Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) Which of the following is a derived unit?

   A.   Second   B.   Metre   C   Kilogram   D.   Newton

(ii) The matter of the Sun is in _____ state.

   A.   Solid   B.   Gas   C.   Plasma   D.   Liquid

(iii) What is the distance of the moon from the earth?

   A. $1.5 \times 10^{15} \, m$ B. $3.8 \times 10^8 \, m$ C. $4.3 \times 10^{16} \, m$ D. $2.0 \times 10^{22} \, m$

(iv) The flight of a butterfly is an example of _____

   A.   Linear Motion   B.   Circular Motion
   C.   Random Motion   D.   Rotatory Motion

(v) What is the value of gravitational acceleration?

   A. $980 \, ms^{-2}$ B. $9.8 \, ms^{-2}$ C. $98 \, ms^{-2}$ D. $0.98 \, ms^{-2}$

(vi) A ball is dropped from the top of the tower. What is the distance covered by it in the first second?

   A.   100 Metre   B.   10 Metre   C.   50 Metre   D.   5 Metre

(vii) What is the value of $\sin 30^\circ$?

   A. $\dfrac{\sqrt{3}}{2}$ B. $\dfrac{1}{\sqrt{3}}$ C. $\dfrac{1}{2}$ D. $\dfrac{1}{\sqrt{2}}$

(viii) What is the unit of torque, in the system of international unit?

   A.   Newton second   B.   Newton
   C.   Newton metre   D.   Newton per second

(ix) Rate of doing work with respect to time is called:

   A.   Force   B.   Power   C.   Energy   D.   Work

(x) What is the Mechanical Advantage of Single Movable Pulley?

   A: 1   B.   2   C.   3   D.   4

(xi) When water changes into ice, what happens with it?

   A.   Contracts   B.   Expands   C.   Become dense   D.   Remain same

(xii) Which material is better for insulation?

   A.   Glass   B.   Brass   C.   Air   D.   Fibre glass

For Examiner's use only:

Total Marks: [12]

Marks Obtained: [   ]

———— 1SA-1007 (L) ————

PHYSICS SSC–I

Time allowed: 2:40 Hours   Total Marks Sections B and C: 53

NOTE:- Answer any eleven parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

SECTION – B (Marks 33)

Q. 2   Answer any ELEVEN parts.   The answer to each part should not exceed 3 to 4 lines.   (11 x 3 = 33)

(i)   Define Nuclear Physics, Geo Physics and Plasma Physics.

(ii)   What is Personal Error? How are the Personal error and Random error minimized?

(iii)   Differentiate between Speed and Velocity.

(iv)   State Newton's First law of motion. Why is this first law of motion also known as law of inertia?

(v)   What causes friction between the two surfaces?

(vi)   Under what condition the distance and displacement between two points will be equal?

(vii)   What is Centrifuge? What is its function?

(viii) What do you know about Interconversion of Kinetic Energy and Potential Energy of free falling bodies?

(ix)   What is lever? State the principle of lever.

(x)   While constructing bridges, one end of the beam is placed on rollers. Why?

(xi)   Define Latent Heat of Fusion and Latent Heat of Vaporization.

(xii)   State the Right Hand Rule.

(xiii) Define Stress and Pressure.

(xiv)   A body moves along a straight line from rest with an acceleration of $2\,ms^{-2}$. Calculate the time taken by it to cover a distance of $100\,m$.

(xv)   Television announced $30^{\circ}C$ temperature of Lahore. How much this temperature be in Fahrenheit and Kelvin Scales?

SECTION – C (Marks 20)

Note: Attempt any TWO questions. All questions carry equal marks.   (2 x 10 = 20)

Q. 3   a.   State and prove the law of conservation of Momentum with one example.   1+4

b.   Prove that $S = v_i\, t + \dfrac{1}{2}\, at^2$ 03

c.   A car is moving with an acceleration of $4\,ms^{-2}$. If its velocity at a certain instant is $10\,ms^{-1}$, then determine how much distance it will cover in the next 5 seconds.   02

Q. 4   a.   What is meant by resolution of vectors? How will you find rectangular components, magnitude and direction of resultant vector?   1+5

b.   A man pulls a car with a force of $70\,N$ making an angle of 30° with the horizontal direction. Find out the x and y components of this force.   03

c.   Define Equilibrium.   01

Q. 5   a.   State and prove the Archimedes principle.   1+5

b.   Define volume expansion and prove that $V_2 = V_1\left[1 + \beta\left(T_2 - T_1\right)\right]$ 03

c.   Define Radiation.   01

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