

Federal Board SSC-I (2011)

PHYSICS SSC-I

SECTION-A (Marks 12)

Time: 20 Minutes

Marks: 12

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.

Q1. Circle the correct option i.e. A / B / C / D. Each part carries one mark.

i. The study of the properties of isolated nuclei of the atom is called _____.

- A. Plasma physics
- B. Nuclear physics
- C. Electromagnetism
- D. Solid state physics

ii. What is the radius of the earth?

- A. 1.0×10^{20} m
- B. 6.9×10^8 m

C. 6.4×10^6 m

D. 1.0×10^4 m

iii. When two bodies are in motion then the velocity of one body relative to the other is called _____.

- A. Relative velocity
- B. Uniform velocity
- C. Variable velocity
- D. Average velocity

iv. The product of mass and velocity of a moving body is called _____.

- A. Newton's Second law
- B. Newton's First law
- C. Force
- D. Momentum

v. The addition of two or more vectors can be represented by a Single vector, which is termed as a _____.

- A. Resultant vector
- B. Negative vector
- C. Rectangular component
- D. None of these

vi. The rotational effect of a force is measured by a quantity known as _____.

- A. Momentum
- B. Torque
- C. Couple
- D. None of these

vii. An artificial satellite is orbiting around the earth at a height 'h'. The centripetal force acting on it is _____.

A. $\frac{mv^2}{h}$

B. $\frac{mv}{R+h}$

C. $\frac{mv^2}{R+h}$

D. $\frac{2mv}{R+h}$

viii. The product of force and distance covered in the direction of force is called _____.

- A. Acceleration
- B. Power
- C. Work
- D. Energy

ix. What is an effort?

- A. A weight fitted by a machine
- B. Force applied on machine for doing work
- C. The ratio of applied force to useful work
- D. None of these

x. The force that arises due to the force of friction between different layers of a fluid in flow is called _____.

- A. Buoyant force
- B. Viscosity
- C. Limiting force
- D. None of these

xi. Quantity of heat required to convert 1 kg of a liquid to gaseous state at its boiling point is called _____.

- A. Latent Heat of fusion
- B. Latent Heat of Vaporization
- C. Convection
- D. None of these

xii. Heat from the sun reaches the earth by _____.

- A. Radiation
- B. Convection
- C. Conduction
- D. None of these

PHYSICS SSC – I

Time allowed: 2:40 Hours

Total Marks: 53

Note: Sections 'B' and 'C' are to be answered on the separately provided answer book. Answer eleven the questions from section 'B' and attempt any two questions from section 'C' Use supplementary answer sheet i.e., sheet B if required. Write your answers neatly and legibly.

SECTION – B (Marks 12)

Q2. Answer any ELEVEN parts. The answer to each part should not exceed three to four lines. (11 × 3 = 33)

- i. Name any six branches of Physics.
- ii. Write a short note on Screw gauge.
- iii. Differentiate between Distance and Displacement.
- iv. Derive $V_f = V_i + at$.
- v. If a wooden block of mass 1.5 kg is pushed along a smooth surface of a table with a force of 6N, find the acceleration of the block.
- vi. Write down any three methods to reduce friction.
- vii. Briefly describe the head to tail rule.
- viii. Briefly write about the states of equilibrium.
- ix. Briefly describe the working of dryer of washing machine.
- x. A motor pulls 2000 kg water in one hour from a 50 m deep well. Find the power of the motor.
- xi. State the principle of lever.
- xii. Define Surface tension.

xiii. T.V announced 30°C temperature of Lahore. How much temperature would be in Fahrenheit and Kelvin scales?

xiv. Why does tea in a cup become cold earlier ad compared to a teapot?

xv. What do you know about the hydraulic press?

SECTION – C (Marks 20)

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

Q3. a. Derive $S = V_i t + \frac{1}{2} at^2$. (3)

b. Explain Newton's Second law of motion with the help of an example. (3)

c. The mass of an astronaut is 100 kg: (4)

i. What will be his weight on the earth?

ii. Find its weight on the moon. The value of gravitational acceleration on the moon is 1.6 ms^{-2}

Q4. a. State Newton's law of gravitation. How can you find mass of the earth with its help? (4)

b. Define Centripetal force. (2)

c. A bowler during playing cricket throws a ball of mass 200 g with a velocity of 20 m / s. Find the kinetic energy of the ball. Also find the amount of work done for throwing the ball by the bowler. (4)

Q5. a. What is an Inclined plane? (3)

b. State Archimedes principle. (3)

c. A 50 g metal piece at 95°C is put in 250 g water at 17°C . Final temperature of Water is changed to 19.4°C . Find the specific heat of the metal piece. (4)