

SECTION–A (40Marks)
(Choose the correct answer)

Question-1

[15×1=15]

- (i) Decrease in speed decreases the _____ energy of a body.
a) kinetic b) potential c) light d) sound
- (ii) The device which converts electrical to mechanical energy is
a) motor b) dynamo c) heater d) electromagnet
- (iii) When a bulb is lighted the dissipated energy is
a) sound b) light c) heat d) electrical
- (iv) A roller coaster has 20,000J of energy at a height of h metres above the ground. At what height above the ground will it have 10,000J of energy?
a) h b) h/2 c) 2h d) h/4
- (v) Arrange the following units of speed in ascending order-
12m/s; 54km/h; 28m/s; 36km/h
a) 36km/h, 12m/s, 54km/h, 28m/s
b) 54km/h, 12m/s, 36km/h, 28m/s
c) 12m/s, 28m/s, 38km/h, 54km/h
d) 36km/h, 54km/h, 12m/s, 28m/s
- (vi) Two bodies A and B have mass 500g and 0.5 kg respectively and are kept at the same height above the ground. Identify the correct statement
a) A has more PE than B
b) B has more PE than A
c) Both have the same PE
d) A has PE double of B
- (vii) The mass of a brass cube of volume 10 cm³ is found to be 84 g. What will be its density in SI unit
a) 8.4 kg/m³ b) 840 kg/m³ c) 8400 kg/m³ d) 84 kg/m³
- (viii) The incorrect relation is
a) volume= area x thickness
b) density= mass/volume
c) distance =speed x time
d) time = speed/distance
- (ix) The device which measures the mass of a body is
a) thermometer b) measuring tape c) electronic balance d) stop clock
- (x) An example of random motion is
a) wheels of a moving vehicle
b) earth moving around the sun
c) motion of a pendulum clock
d) motion of gas particles in smoke

- (xi) Identify the false statement
- Moving vehicles generally have non uniform motion.
 - Weight of a body always acts vertically downwards.
 - Two trains going at the same speed in the same direction are at rest with respect to each other.
 - Two trains going in opposite directions with the same speed are at rest relative to each other.
- (xii) How long will it take a boy running at 5 km/h to cover a distance of 500 m
- 6 min
 - 6 hours
 - 6 sec
 - 60 sec
- (xiii) The mass of a boy is 40 kg. What will be the weight of the boy at the moon's surface? (the pull of gravity on 1kg at the moon's surface is 1.6 N)
- 6.4 N
 - 64 N
 - 640 N
 - 0.64 N
- (xiv) Assertion (A) : A spin bowled cricket ball has rotatory as well as translatory motion
Reason (R) : An object undergoes both translatory and rotatory motion in a rolling motion
- Both A and R are true and R is the correct explanation of A
 - Both A and R are true but R is not the correct explanation of A
 - A is true but R is false
 - A is false but R is true
- (xv) Assertion (A) : The distance covered by an object in unit time is called its speed
Reason (R) : Speed always remains constant
- Both A and R are true and R is the correct explanation of A
 - Both A and R are true but R is not the correct explanation of A
 - A is true but R is false
 - A is false but R is true

Question-2

- (a) Choose the correct answer [6]
- The angle of incidence when a ray of light strikes a reflecting surface is _____ (0° ; 90°)
 - The energy stored in an electric cell is _____.(electrical / chemical)
 - When work is done on a body, its energy _____.(decreases/increases)
 - A person sitting in a compartment of a moving train is _____ with respect to another person sitting by his side.(in motion/ at rest)
 - In ____motion, the axis of rotation passes from a point in the body itself.(circular/rotatory)
 - Water _____ on heating from 0°C to 4°C .(expands/ contracts)
- (b) State the law of conservation of energy. [2]
- (c) State the 2 laws of reflection of light. [2]

Question-3

- (a) State 2 factors of the kinetic energy. [2]
- (b) Give one word: [2]
- The perpendicular drawn on the surface at the point of incidence.
 - medium through which light passes easily.
- (c) State the energy change in the following [2]
- photosynthesis
 - bursting of fire crackers

- (d) Arrange the following substances in order of their increase in density. [2]
 (a) Iron b) cork c) water d) mercury
- (e) Define (i) reflection (ii) energy [2]
- (f) Convert (i) 90 km/h to m/s (ii) 75 m/s to km/h [2]
- (g) A car travels at a uniform speed of 30 km/h for half an hour and then at a speed of 40 km/h for the next 30 min. Find (i) the total distance covered by the car and (ii) its average speed. [3]

Section –B
(40Marks)(AnswerAny4)

Question-4

- (a) Define the term volume of a substance. State its S.I. and C.G.S unit. How are they related? [3]
- (b) Explain the meaning of the terms rest and motion with examples. [3]
- (c) Compare the kinetic energy (i) a bike and a truck moving with same speed [4]
 (ii) two trains of equal masses moving with 80 km/h and 70 km/h

Question-5

- (a) Which type of energy changes to kinetic energy when it is put to use? Give two examples of bodies having this energy [3]
- (b) Differentiate between mass and weight (3 points)
- (c) A cubical tank of side 2 m filled with 6000 kg of a liquid. Find: (i) the volume of tank (ii) the density of liquid in kg m^{-3} [4]

Question-6

- (a) State the energy changes that occur in the following
 (i) biogas (ii) electromagnet (iii) washing machine [3]
- (b) Name the method to find the volume of irregular object. An iron piece was dropped into water in a graduated cylinder, the initial volume of water is 56 mL, now the new volume is 85 mL. Find the volume of iron piece in cm^3 . [3]
- (c) (i) The speed of a plane is 600 km/h. How much distance can it cover in 10 second?
 (ii) The speed of a car is 65 km/h. How much time will it take to cover a distance of 585 km? [4]

Question-7

- (a) Define work. State two factors on which work done depends. [3]
- (b) (i) what do you mean by 1 joule of work?
 (ii) What is vibratory motion?
 (iii) Define circular motion. [3]
- (c) Label the terms (i) angle of incidence (ii) normal [4]
 (iii) angle of reflection (iv) incident ray

Question-8

- (a) A ball is made to fall freely from a height. State the energy possessed by the ball when it is
 (i) at the highest point (ii) just in the middle (iii) at the ground [3]
- (b) Define translatory motion. State its kinds and define them [3]
- (c) Define area. State its S.I unit. How S.I unit related to 10 Hectare and 1 squared cm. [4]