NEET Sample Paper for Physics

Q.1 When a sphere rolls down an inclined plane, then identify the correct statement related to the work done by friction force-

(1) the friction force does positive translational work.
(2) the friction force does negative rotational work.
(3) the net work done by friction is zero.
(4) All of the above

Q.2 The coefficient of static friction between the box and the train's floor is 0.2. The maximum acceleration of the train in which a box lying on its floor will remain stationary is (Take g = 10 ms–2)

(1) 2 m s–2
(2) 4 m s–2
(3) 6 m s–2
(4) 8 m s–2

Q.3 A point mass moves along a circle having a radius 20 cm with a constant tangential acceleration of 5 cm /s 2. How much time is needed after motion begins for the normal acceleration of the point mass to be equal to tangential acceleration?

(1) 1 s
(2) 2 s
(3) 3 s
(4) 4 s

Q.4 Two soap bubbles in the vacuum of radius 3 cm and 4 cm coalesce to form a single bubble under isothermal conditions. Then the radius of the bigger bubble is;

(1) 7 cm
(2) 12/ 7 cm
(3) 12 cm
(4) 5 cm

Q.5 A 14.5 kg mass, fastened to the end of a steel wire of unstretched length 1m, is whirled in a vertical circle with an angular velocity of 2 rev/s at the bottom of the circle. The cross-sectional area of the wire is 0.065 cm2. The elongation of the wire when the mass is at the lowest point of its path;

[Ysteel = 2 × 1011 N/m2]

(1) 9.67 mm
(2) 6.67 mm
(3) 1.87 mm
(4) 0.12 mm

Q.6 The horizontal and vertical displacements of a particle moving along a curved line are given by x = 5t and y = 2t 2 + t. The time after which its velocity vector makes an angle of 45° with the horizontal is;

(1) 0.5 s
(2) 1 s
(3) 2 s
(4) 1.5 s

Q.7 A closed organ pipe and an open organ pipe are tuned to the same fundamental frequency. The ratio of their lengths is;

(1) 1: 2
(2) 2: 1
(3) 1: 4
(4) 4: 1

Q.8 A power transmission line feeds input power at 2300V to a step-down transformer with its primary windings having 4000 turns. The output power is delivered at 230V by the transformer. If the current in the primary of the transformer is 5A and its efficiency is 90%, the output current would be;

(1) 50 A
(2) 45 A
(3) 35 A
(4) 25 A

Q.9 A satellite is moving with a constant speed ‘V’ in a circular orbit about the earth. An object of mass ‘m’ is ejected from the satellite such that it just escapes from the gravitational pull of the earth. At the time of its ejection, the kinetic energy of the object is;

(1) 1 2 2 mV
(2) mV2
(3) 3 2 2 mV
(4) 2mV

Q.10 A solid sphere rolls down two different inclined planes of the same height but of different inclinations;

(1) in both cases the speeds and time of descend will be same.
(2) the speeds will be same but time of descend will be different.
(3) the speeds will be different but time of descend will be same.
(4) speeds and time of descend both will be different

Q.11 In a stationary wave system, all the particles of the medium;

(1) have zero displacements simultaneously at some instant.
(2) have maximum displacement simultaneously at some instant.
(3) are at rest simultaneously at some instant.
(4) All of the above

Q.12 Assertion: Internal forces cannot change linear momentum.
Reason: Internal forces cannot change the kinetic energy of a system.

(1) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.
(2) If both Assertion and Reason are true and the Reason is not a correct explanation of the Assertion.
(3) If Assertion is true but Reason is false.
(4) If Assertion is false and Reason is true