



PHYSICS SSC-I

Time allowed: 2-45 Hours

NOTE: Answer any eleven parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly. 00003307

Total Marks Sections B and C: 52

SECTION - B (Marks 32)

Q.1 Attempt any ELEVEN parts. All parts carry equal marks.

(11 x 3 = 33)

- (i) Mass of earth is 6.0×10^{24} Tera gram. Express this value in milligrams.
- (ii) A train slows down from 30 ms^{-1} with a uniform retardation of 2 ms^{-2} . How long will it take to attain a speed of 20 ms^{-1} ?

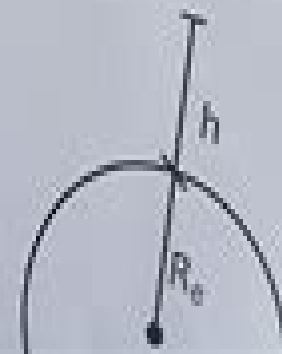
(iii) What is meant by the following terms?
a. Circular Motion

b. Rotatory Motion

c. Vibratory Motion

- (iv) What is centripetal force? Also show that $r_c = \frac{mv^2}{F}$
- (v) Differentiate between 'weight' and 'mass'
- (vi) Briefly explain 'center of mass' and 'center of gravity'.
- (vii) Calculate mass of earth by using law of gravitation. (Diagram is not required)
- (viii) Briefly explain the term 'Couple'. Also give an example.

(ix) Determine the variation in value of 'g' with altitude. Also prove that $g_h = G \frac{M_e}{(R_e + h)^2}$



- (x) Under what conditions work done on the body is maximum and minimum?
- (xi) A car has Kinetic Energy "K". What will be the effect on "K" if the speed is halved?
- (xii) Why is plasma often called as the fourth state of matter?
- (xiii) Liquids exert pressure in all directions. Why?
- (xiv) Define surface tension.

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Huangqi Zhang



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