TEST PAPER: PHYSICS

Time: 45 Minutes **Class:** I.C.S.E. 9

Max. Marks: 30 Marks **Date:** 5th September 2018

Marking Scheme: *All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.*

Question 1:

a. Derive the 3 equations of motion either graphically or algebraically

b. A car is initially moving with a velocity of 20 m/s. Brakes are applies and car comes to a halt in 5 seconds. Calculate the following

   i. Acceleration of the car

   ii. Velocity of the car 2 seconds after the application of brakes

   iii. Velocity of the car 20 seconds after the application of brakes

c. A car travels with a uniform velocity of 90 km/hr for 5 s. the brakes are then applied and the car comes to rest in further 10 s. find

   i. The distance which car travels before the brakes are applied.

   ii. The retardation

   iii. Distance travelled by the car after the brakes are applied

Question 2.

a. Mention the two main effects a force can produce along with an example of each

b. Answer the following:

   i. State Newton's first law of motion.

   ii. Define inertia

   iii. Give an example each of inertia of rest and inertia of motion

c. Describe any three contact forces and any one non-contact force with the help of a diagram

Question 3.

a. Two balls A and B of mass m and 2m are in motion with velocities v and 2v respectively. Compare

   i. their inertia

   ii. their momentum

   iii. the force needed to stop then in the same time

b. A body of mass 500g, initially at rest, is acted upon by a force which causes it to move a distance of 4 m in 2 s. Calculate the force applied

c. Give Newton's third law of motion along with 3 examples.