

- 7 a. Discuss the advantages of series parallel control of starting as compared to the rheostatic starting for a pair of DC traction motors. (06 Marks)
- b. With neat sketches, explain current collection system in electric locomotives. (06 Marks)
- c. Two motors rated at 1500V have armature resistance of 0.15ohm and take current of 500A each during starting. The effective weight of the train 140 tonnes, dead weight 120 tonnes, specific resistance of 50N Newton's / tonnes tractive effort/ motor 38000 Newton's, speed at the end of starting period 50 kmph, determine : i) duration of starting period ii) speed of train at transition iii) rheostatic loss. (08 Marks)
- 8 a. Explain conceptual illustration of general electric vehicles with block diagram. (10 Marks)
- b. With relevant graph, explain the electric vehicle performance characteristics.[speed v/s tractive effort]. (10 Marks)

* * * * *