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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL-2019

DEEE - SIXTH SEMESTER EXAMINATION

ELECTRIC TRACTION AND RENEWABLE ENERGY SOURCE

Time: 3Hrs

Max. Marks: 80

PART-A

10x3=30M

Instructions: 1) Answer all the questions. Each question carries three marks
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1) Write the disadvantages of electrical traction.
- 2) Sketch the speed-time curves for urban and main line service.
- 3) Define maximum speed and schedule speed.
- 4) Write the factors which effecting the Specific Energy consumption.
- 5) List the non conventional energy sources.
- * 6) Draw solar power generation line diagram.
- 7) Write four important considerations for selecting site to wind energy.
- 8) List the various thermal Devices.
- 9) Draw the KVIC digester plant.
- 10) Draw the block diagram of CCPP plant.

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PART-B

10x5=50M

Instructions: 1) Answer any five questions Each question carries ten marks
2) Answer should be comprehensive and the criterion for valuation is the content but not length of the Answer.

11) (a) Define the coefficient of adhesion, factors affecting, and methods to improve the coefficient of Adhesion.

(b) What are the requirements of electric motors used for traction work?

12) (a) Write diagrams explain bow collector and pantograph collector.

(b) With neat diagram explain booster transformer.

13) A tram car consists of two motors of each 12 ton and develops 10 KW while the car ascends an incline of 2.5%. Find the speed of the car if gearing efficiency is 95% and track resistance is 60N/ton.

14) A 500 ton goods train is to be hauled by a locomotive up a gradient of 2%, with an acceleration of 1.2 Kmphps. Coefficient of adhesion is 25%, track resistance 40N/ton and effect of rotation masses 10% of dead weight. Find the weight of locomotive and no of axles if axle load is not to exceed 21 ton.

15) (a) State the need of renewable energy sources.

(b) Draw the wind mill and label the parts.

16) (a) Explain with neat diagram solar water pumping.

(b) Draw and explain electrical characteristics of PV cell.

17) (a) How bio gas plants classified explain briefly.

(b) Explain single basin tidal power plant.

18) Explain with block diagram, the working of combined cycle power plant.

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