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Reg.No............................

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2021

ELECTRIC TRACTION

[Maximum marks: 100] (Time: 3 Hours)

PART – A

[Maximum marks: 10]

I. (Answer all questions in one or two sentences. Each question carries 2 marks)

(1) Define Busbar.

(2) Define elementary section.

(3) Write a short note on encumbrance.

(4) Write any two type of supporting power to electric traction.

(5) List any two requirement of signalling system. (5 x 2 = 10)

PART – B

[Maximum marks: 30]

II.(Answer any ***five*** of the following questions. Each question carries six marks)

(1) Draw the feeding and sectioning arrangement in traction system.

(2) Explain contact wire gradient.

(3) Explain the effect of speed on OHE.

(4) Write short note on third rail system.

(5) List any three the type of current collectors.

(6) Name the different type of signals.

(7) Explain the special requirement of train lightning. (5 x 6= 30)

PART – C

[Maximum marks: 60]

(Answer one full question from each unit. Each question carries 15 marks)

UNIT –I

III. (a) Write short note on various four major equipment's in substation. (8)

(b) List various elements of power supply system. (7)

OR

IV. (a) Explain 25 KV catenary protection systems for AC traction. (8)

(b) Explain the factors influencing location and spacing of substations. (7)

UNIT-II

V. (a) Write a short on composition of OHE. (8)

(b) Explain modified Y catenary. (7)

OR

VI. (a) Draw and explain OHE supporting structure. (8)

(b) Explain OHE maintenance schedule. (7)

UNIT-III

VII. (a) Explain any two current collectors. (8)

(b) Explain diamond type of pantograph. (7)

OR

VIII. (a) Explain the methods of rising and lowering of pantograph. (8)

(b) Explain maintenance of pantograph (7)

UNIT-IV

IX. (a) Distinguish between three aspect signaling and four aspect signaling. (8)

(b) List the advantages of colour light signals. (7)

OR

X. (a) Explain the method of obtaining unidirectional polarity. (8)

(b) Explain traction dynamo method to obtain constant output irrespective of speed. (7)

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