

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-661
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (EEP/EE/EEE) (Sem-I)
Elective-I Electrical Traction and Utilization
[CGPA]

[Time: Three Hours]**[Max. Marks: 80]**

Please check whether you have got the right question paper.

- N.B
- 1) Q.No.1 from section A and 6 from section B are compulsory.
 - 2) Attempt any two questions from Q.2 to Q.5 and Q.7 to Q.10.
 - 3) Assume suitable data wherever necessary.

Section A

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| Q.1 | Solve any five questions from the following. | 10 |
| | <ol style="list-style-type: none"> a) Write down any four difference between Third Rail System & OHE. b) Enlist the types of Choice of Traction system. c) Draw the neat labeled Pentograph Current Collector diagram. d) Draw the Block diagram of AC Locomotive? e) Write down the drawbacks of tramways. f) What do you mean by self-relieving property in traction motor? g) Why DC motor is used widely for traction system. h) How Linear Induction is related with Traction System. | |
| Q.2 | a) Explain Diesel Engine Driven 3-phase synchronous generator feeding 3-phase Induction Motor through Diode Bridge & inverter. | 07 |
| | b) Write a short note on Flywheel Drive and Battery Drive system. | 08 |
| Q.3 | a) Explain Major Traction substation equipment. | 07 |
| | b) Write a short note on signaling interference in telecommunication lines. | 08 |
| Q.4 | a) Explain Characteristics of Traction motor in detail. | 07 |
| | b) Distinguish between Suitability of DC Series motor and DC shunt motor for traction duty. | 08 |
| Q.5 | Write a short note on | 15 |
| | <ol style="list-style-type: none"> i. D.C. Electrification system ii. Current Collectors in traction system iii. Repulsion Motor | |

Section B

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| Q.6 | Solve any five questions from the following. | 10 |
| | <ol style="list-style-type: none"> a) What is the use of interlock? b) Draw speed time curve for Train movement and Braking? | |

- c) What do you mean by Crest speed and Scheduled speed?
- d) What do you mean by Dead man's handle?
- e) Which braking is used in traction system and why?
- f) Draw the neat labeled diagram of Vapour Compression Refrigeration cycle.
- g) Write down the function of Evaporator and Condenser.
- h) Give the methods of traction motor control.

Q.7	a) Write a short note on Use of Metadyne in traction system.	07
	b) Explain Series parallel Controllers used in Traction system with circuit diagram.	08
Q.8	a) Explain Speed time Curve movement and braking in detail.	07
	b) Factors Affecting Specific Energy Consumption of an Electric Train Operating on a Given Schedule Speed.	08
Q.9	a) Explain Vapour Compression Refrigeration cycle with neat labeled diagram.	07
	b) Explain Central Air Conditioning system.	08
Q.10	Write a short note on,	15
	i. Multiple Control Unit	
	ii. Magnetic Track Brakes	
	iii. Water Coolers	