

Total No. of Printed Pages:02

**SUBJECT CODE NO: H-250**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.E. (EEP/EE/EEE)**  
**Elective-II: Electric Traction & Utilization**  
**(REVISED)**

[Time: Three Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

- N.B
- i) Q. 1 & Q. 6 are compulsory
  - ii) Solve any two from section A & B excluding compulsory questions
  - iii) Assume suitable data

**Section A**

- |     |  |          |
|-----|--|----------|
| Q.1 | Attempt <u>any five</u>  | 10       |
|     | <ol style="list-style-type: none"> <li>a) Define traction</li> <li>b) Give the function of flywheel</li> <li>c) Give the function of SCR</li> <li>d) Define sag and tension</li> <li>e) Give the principle of DC generator</li> <li>f) Give the function of current collectors</li> <li>g) Give the difference between DC generator and DC motor</li> <li>h) Draw the block diagram of AC electric locomotive</li> </ol> |          |
| Q.2 | <ol style="list-style-type: none"> <li>a) Explain hybrid drive system</li> <li>b) Explain single phase high frequency AC system</li> </ol>   | 08<br>07 |
| Q.3 | <ol style="list-style-type: none"> <li>a) Explain working principle of linear-induction motor</li> <li>b) Explain signaling interference in telecommunication circuits</li> </ol>  | 08<br>07 |
| Q.4 | <ol style="list-style-type: none"> <li>a) Explain feeding and distributing system</li> <li>b) Give the difference between electrical and mechanical breaking system</li> </ol>   | 08<br>07 |
| Q.5 | <ol style="list-style-type: none"> <li>a) Write a short note on characteristics of traction motors</li> <li>b) Write a short note on choice traction system</li> </ol>   | 08<br>07 |

**Section B**

- |     |   |    |
|-----|---|----|
| Q.6 | Attempt <u>any five</u>   | 10 |
|     | <ol style="list-style-type: none"> <li>a) Define duty cycle</li> <li>b) What is regeneration</li> <li>c) What are the factors affecting electric traction motor speed</li> <li>d) What are the different components of substation</li> <li>e) What are the different types of controllers</li> <li>f) What is the use of Metadyne</li> <li>g) Give the function of braking</li> <li>h) What is the use of interlocks</li> </ol> |    |

- Q.7 a) Explain schedule speed and factors affecting it. 08  
 b) Explain master controllers 07
- Q.8 a) Explain room air conditioners. 08  
 b) Explain magnetic track braking system? 07
- Q.9 a) Explain Rheostatic braking system? 08  
 b) Explain water cooler system 07
- Q.10 a) Write a short note on average acceleration and speed 08  
 b) Write a short note on multiple unit control? 07