[Total No. of Printed Pages:2]

### CODE NO:- Z-451

FACULTY OF ENGINEERING & TECHNOLOGY

# B.E(EEP/EE/EEE)Year Examination June- 2015

## Electric Traction & Utilization(EL-II)

#### (Revised )

[Time: Three Hours]

[Max. Marks: 80]

"Please check whether you have got the right question paper."

- i) Question No.1 & Question No.6 are compulsory.
- *ii)* Solve <u>any two</u> questions from remaining from each section.

### SECTION A

<ul> <li>a) State main requirements of ideal traction system.</li> <li>b) State merits &amp; demerits of electric traction system.</li> <li>c) Advantages &amp; disadvantages of electric traction system.</li> <li>d) Draw single line diagram of typical electric system.</li> <li>e) Calculate sag to be given to a trolley wire 1cm. in diameter and weighing 0.72kg/ meter .when erected with a span o0f 60meter and if the stress in wire erected is 640 kg/cm<sup>2</sup>.</li> <li>f) What is need of starter in d.c traction motors</li> <li>g) Enlist the traction motors ne3ed in electric traction system.</li> <li>h) What is function of traction X'mer in ETS</li> <li>Q.2 a) Explain the requirement for ideal traction and show which drive satisfy almost all the requirements.</li> <li>b) Describe in detail trolley bus system of electric traction.</li> <li>b) Describe in detail trolley bus system of electric traction.</li> <li>c) a) Explain desirable characteristics of traction motors.</li> <li>b) Explain desirable characteristics of traction duties.</li> </ul> Q.4 a) Explain desirable characteristics of traction motors. <ul> <li>b) Signaling interference in telecom circuits</li> <li>c) Compensated repulsion motors</li> <li>g.4 Attempt any 5 of following</li> <li>a) Draw series/ parallel control arrangements of traction motors?</li> <li>d) Draw series/ parallel control arrangements of traction motors?</li> <li>c) What are advantages of thyristor control of traction motors?</li> <li>d) Why ontary mechanical regenerative breaking?</li> <li>f) What is mean by mechanical regenerative breaking?</li> <li>f) What is mean by mechanical regenerative breaking?</li> <li>f) Why master controller is equipped with dead mans handle?</li> <li>g) What is practical unit of refirgeration cycles.</li> </ul>	Q.1	Solve <u>any five</u> of the following	
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b) Explain use of metadyne and megavolt in traction control.	Q.7		07
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Q.8 a) Discuss a method of electrical braking for traction motors.	08
b) Explain speed time curve for	07
1) Tramcar	
2)	
3) Trolley buses	
4) Urban services	
5) Sub- urban electric train.	
Q.9 a) With help of circuit diagram explain the working of water of water cooler	07
b) Explain central air conditioning system	08
Q.10 Write short notes on	
a) Method of traction motor controls	05
b) Tractive effort calculations	05
c) Domestic refrigerators	05