S.A. ENGINEERING COLLEGE

Accredited by NBA & NAAC with 'A' Grade
ISO 9001:2015 Certified Institution

Register No:

INTERNAL ASSESSMENT - I
EVEN SEMESTER, 2018-2019
B.E. ELECTRICAL AND ELECTRONICS ENGINEERING
EE6801 - ELECTRIC ENERGY GENERATION, UTILIZATION & CONSERVATION

Time: 90 min. **SEMESTER-VIII** **MAXIMUM MARKS: 50**

COURSE OBJECTIVES:

- To introduce the energy saving concept by different ways of illumination.

COURSE OUTCOMES: After completion of this course, students will be able to

EE6801.1 - Understand the various concepts of electrical drives in traction and its applications
EE6801.2 - Obtain the basic knowledge of illumination and classification of lighting systems

Answer ALL the Questions
PART – A (5 x 2 = 10 Marks)

1. Define electrical drive
2. Write the different types of electric drives
3. Why tungsten is selected as the filament material?
4. Define the term MSCP and lamp efficiency
5. Define utilization factor in the design of the lighting scheme

PART – B (2 x 13 = 26 Marks)

6. (a) (i). Explain the requirements of electric traction system. CO1 **(5)**
(ii). Describe the mechanism of train movement with speed-time curve. CO1 **(8)**

(Or)

(b) A train weighing 200 tonnes uses regenerative braking on a down gradient of 2% when the speed is changed from 60 Kmph to 20 Kmph over a distance of 4 Kms. Determine the electrical energy and average power returned to the supply system. Assume tractive resistance of N/tone, rotational inertia of 10% and efficiency of conversion of 75%. If the regenerative braking does not change the speed down the gradient, determine the power fed into the supply system. CO1 **(13)**

7. (a) (i). Explain in detail the principle of operation of fluorescent lamp CO2 **(6)**
(ii). Describe and prove laws of illumination CO2 **(7)**

(Or)

(b) A drawing hall 30 * 15 meters with a ceiling height of 5 meters is to be provided with a general illumination of 12 lux. Taking a co-efficient of utilization of and depreciation factor of 1.4, determine the number of fluorescent tubes required, their spacing mounting height and total wattage. Tasking luminous efficiency of fluorescent tube as 40 lumens / watt fpr 80 watt tube. CO2 **(13)**

PART – C (1 x 14 = 14 Marks)

8. Discuss the various steps followed in calculation of illumination for designing the residential lighting CO2 **(14)**

COURSE CO-ORDINATOR **HOD** 12/12/18 **PRINCIPAL**

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INTERNAL ASSESSMENT – II
EVEN SEMESTER, 2018-2019
BE- ELECTRICAL AND ELECTRONICS ENGINEERING
EE8403 – MEASUREMENTS AND INSTRUMENTATION

TIME: 90 MINUTES. **SEMESTER - IV** **MAXIMUM MARKS: 50**

Course Objectives:

- To educate on the comparison between various measurement techniques
- To introduce various storage and display devices

Course Outcomes:

At the end of the course, the student should be able to:

EE8403.3 : Acquire the knowledge of various bridges and measurement techniques

EE8403.4 : Understand the operation and performance of various types of storage and display devices

Answer ALL the Questions
PART – A (5 x 2 = 10 Marks)

1. Distinguish LCD and LED
2. What is a potentiometer? List its applications.
3. What are the main parts of CRT?
4. Compare plotter and printer.
5. What are the functions of data logger?

PART – B (2 x 13 = 26 Marks)

6. (a) i)Explain in detail about grounding Technique[CO3] **(6)**
ii)Draw and explain about the working of Transfor ner ratio bridge [CO3] **(7)**

OR

(b) i)Draw a neat diagram of kelvin's double bridge an l explain how to measure low resistance [CO3] **(7)**

ii)Draw and explain about the working of Transformer ratio bridge [CO3] **(6)**

7. (a) Draw and explain the working of CRT. [CO4] **(13)**

OR

(b) Write short notes on
i). X-Y recorder and describe its working[CO4] **(6)**
ii). Describe the construction and working of magnetic tape recorder[CO4] **(7)**

PART – C (1 x 14 = 14 Marks)

8. With neat circuit diagram explain the working of duo range potentiometer. [CO3] **(14)**

COURSE COORDINATOR **HOD** PRINCIPAL

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Register No:

INTERNAL ASSESSMENT – III
EVEN SEMESTER, 2018-2019
B.E ELECTRICAL AND ELECTRONICS ENGINEERING
EE8402- TRANSMISSION AND DISTRIBUTION

Time: 3 HRS. **SEMESTER - IV** **MAXIMUM MARKS: 100**

COURSE OBJECTIVES:

- To study the structure of electric power system and to develop expressions for the computation of
- transmission line parameters.
- To obtain the equivalent circuits for the transmission lines based on distance and to determine voltage
- regulation and efficiency.
- To understand the mechanical design of transmission lines and to analyze the voltage distribution in
- insulator strings to improve the efficiency.
- To study the types, construction of cabilitys and methods to improve the efficiency.
- To study about distribution systems, types of substations, methods of grounding, EHVAC, HVDC and FACTS.

COURSE OUTCOMES: After completion of this course, students will be able to

EE8402.1	To understand the importance and the functioning of transmission line parameters.
EE8402.2	To acquire knowledge on the performance of Transmission lines.
EE8402.3	To understand the concepts of Lines and Insulators.
EE8402.4	To acquire knowledge on Underground Cabilitys.
EE8402.5	To understand the importance of distribution of the electric power in power system.
EE8402.6	To become familiar with the function of different components used in Transmission and Distribution levels of power system and modelling of these components.

Answer ALL the Questions

PART – A (10 x 2 = 20 Marks)

1. What is skin effect? On what factors does it depend?
2. Distinguish between self and mutual GMD.
3. Write the formula for finding surge impedance of transmission line.
4. What is Ferranti effect?
5. Define safety factor of insulator. Why it is desired to have this value be high
6. What is a sag template?
7. What is belted cable?
8. What is meant by dielectric stress in a cable?
9. Enumerate the various methods of neutral grounding.
10. State the applications of HVDC transmission.

PART – B (5 x 13 = 65 Marks)

11 (a) A three phase circuit line consists of 7/4.5 mm hard drawn copper conductors. The arrangement of the conductors is given. The line is completely transposed. Calculate inductive reactance per phase per km of the system. CO1 **(13)**