

Code No.: 50227

MR15-(2015-16 Batch)

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)

Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **EHV AC TRANSMISSION**

Branch: EEE

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2M=10 M

1. Define bundle radius.
2. List out the properties of a potential function.
3. Mention the limits of audible noise.
4. Write the applications of static VAR System.
5. Mention the remedies for transient torque problem.

PART-B

Answer any FIVE questions of the following

5x10 M= 50M

1. Discuss why EHV AC Lines are Necessary to transmit large blocks of power over long distances.
2. a) Describe the charge-potential relations of a transmission line with n conductors on a tower.
b) Derive an expression for Maximum Charge Condition on a 3-Phase Line.
3. Explain the measurement of radio interference and influence voltage using radio noise meter.
4. a) Explain the relationship between single-phase and three-phase audible noise levels.
b) Write short notes on frequency spectrum.
5. Derive an equation for calculation of electrostatic field of double-circuit 3-phase AC line.
6. Explain in detail sub synchronous resonance problems and counter measures.
7. Explain the voltage drop control using synchronous condenser.
8. Write short notes on any two of the following
 - a. Aeolian vibration.
 - b. Two -conductor line.
 - c. What are the methods used to reducing corona?

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IV B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019Subject: **POWER SYSTEM & OPERATION CONTROL**Branch: **EEE**Time: **3 hours**Max. Marks: **60****PART – A**Answer **ALL** questions of the following**5x2M=10 M**

1. What is optimum generation Allocation?
2. Distinguish between long term and short term hydra- thermal scheduling.
3. Write the condition of dynamic response.
4. What is tie-line bias control?
5. What is the permissible voltage variation of power system.

PART-BAnswer **ANY FIVE** questions of the following**5x10 M= 50M**

1. A Power system consists of 120MW units whose input data is represented by the equations
 $C_1 = 0.004P_1^2 + 30 P_1 + 200$ RS/hr
 $C_2 = 0.004P_2^2 + 30 P_2 + 800$ RS/hr. If the total received power is 300MW. Determine the load sharing between the units for most economic operation.
2. Derive the expression for optimal generation allocation with and without considering losses.
3. Explain Kirchmayers method.
4. A two plant system having a thermal station near the load centre and a hydro power station at remote location, the characteristics $C_1 = 20 P_1 + 0.03 P_1^2$, $W_2 = 8P_2 + 0.0025 P_2^2$, $\gamma_2 = Rs \ 5 \times 10^{-4}$, $\beta_{22} = 0.0005$. Determine the generation at each station.
5. a) For an isolated single area $P_r = 500$ MW, nominal operating load = 1000MW, $H=5$ sec, $D=5\%$ of frequency, $f=50$ Hz, load decreases by 1% for decrease in frequency by 2%. Find the gain and time constant of power system.
 b) Explain the dynamic state response of single area.
6. Explain the proportional plus integral controller of single area system with help of block diagram.
7. Develop a mathematical model for two area load frequency control system.
8. Explain the differences between shunt and series compensation.