

**Page=02****End Semester Examination (ESE), 2020**Semester: 6<sup>th</sup> (Regular)

AC Distribution and Utilisation

Subject Code: EI- 602

Total Marks: 56

Time: 2 Hour 30 minutes

**All questions are compulsory****PART – A****Marks – 10**

1. An over excited synchronous motor on no load is known as ----- 1
2. In a 3- phase, 4 – wire a. c. system, if the loads are balanced, then what is the current in the neutral? 1
3. Maximum demand tariff is not applied to domestic consumer because ----- 1
4. Which one is costly – underground system or overhead system? 1
5. What is the unit of luminous flux? 1
6. What type of heating method has maximum power factor? 1
7. During resistance welding heat produced at the joint is proportional to ----- 1
8. Which part of a motor needs maximum attention for maintenance? 1
9. The process of providing an oxide film is known as ----- 1
10. What are the three elements of a distribution system? 1

**PART – B****Marks – 46**

11. Why is the power factor improvement in power supply system necessary? 3
12. What are the advantages of electric heating? 3
13. Write the difference between illumination and luminous intensity. 3

14. With a neat diagram, show the various parts of a three phase cable. 3
15. What are the advantages of implementing SCADA system for electrical distribution. 3
16. Compare the merits and demerits of underground system versus overhead system. 4
17. What are the different types of tariff? Write short notes on power factor tariff. 4
18. What is an electrical drive? Name the motors which are generally used for Electrical drives. 4
19. Discuss the design considerations in a distribution system. 4
20. A 3 phase, 4 KW induction motor has a power factor of 0.8 lagging. A bank of capacitors is connected in delta across the supply terminals and power factor raised to 0.95 lagging. Determine the KVAR rating of the capacitors connected in each phase. 5
21. A consumer has a maximum demand of 200 KW at 40% load factor. If the tariff is Rs 150 per KW of maximum demand plus Rs 5.00 per KWh, find the overall cost per KWh. 5
- OR
21. Explain the method of solving A. C. distribution problem when p. f. of load current is given w. r. t. receiving end voltage. Also draw the vector diagram. 5
22. The candle power of a lamp is 120. A plane surface is placed at a distance of 2.5 meter from this lamp. Calculate the illumination on the surface when it (i) normal, (ii) inclined to  $45^\circ$  and (iii) parallel to rays. 5