6TH SEM. /ELE. & MECH./ELE./ 2024(S)

Th-1 Electrical Installation and Estimating

Full Marks: 80 **Time- 3 Hrs**

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. What is the permissible voltage drop in internal domestic wiring?
   b. Where we use TPIC and TPICN main switch?
   c. On what basis is the number of circuits/sub-circuits determined in house wiring installations?
   d. Write the abbreviation of ACSR, TPIC, TRS, and MCCB used in electrical estimation.
   e. According to IE rules, a cutout(fuse) shall not be placed in the earthed neutral conductor of two-wire system. Discuss the reason to justify this rule.
   f. Why charcoal and salt are used in earthing?
   g. Why A.B switch and isolator are used?
   h. Classify the cable according to the voltage grading?
   i. What is the function of cross arm in an overhead transmission line?
   j. Draw a single line diagram of 11KV/400V distribution transformer substation.

2. Answer **Any Six** Questions 6 x 5

   a. What are type of cables According to type of insulations? What are the advantages of multistrand cables.
   b. What are factors depends for selection of size of conductor for overhead transmission line?
   c. Explain why earthing of an electrical installation and electrical equipment is important. Write the IE rules regarding earthing of an electrical installation and equipment.
   d. What is difference between direct lighting and indirect lighting?
   e. Write a short note on shackle insulators in overhead lines with a neat diagram.
   f. Draw and explain stair case wiring to control one light.
   g Draw a neat sketch of stay which will be provided at the end of pole in the distribution system, with required materials.

3 Prepare a list of materials for providing connection to a double storeyed building with a load of 4KW at 240-volt, 50 Hz. Separate meters are to be provided for the two floors. Distance between pole and building is 12m and between service bracket and service board is 10m. 10

4	Estimate the material required for pipe earthing.	10
5	An overhead 11 KV, 50 Hz line has to be erected using 27kg,10m long steel pole and ACSR conductor of 6/1×2.59 mm with an average span of 150m. Make a list of material required and estimate cost per km.	10
6	A godown has 4 rooms of size 3m×3m. A 100 W lamp in each room has to be provided at centre of room. Ceiling height is 3 meters. (a) Draw the connection diagram of godown wiring for all rooms. (b) Estimate material and cost of conduit wiring.	10
7	Describe in brief different types of domestic wiring system.	10