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Roll No. .... /30944

**4th Sem / Electrical Engg, Power Station Engg,  
Elect & eltx Engg.**

**Subject:- Electrical Engg. Design & Drawing - II**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** All questions are compulsory

- Q.1 i) Explain the concept and purpose of earthing.  
(CO3) 2 marks
- ii) Explain the methods of reducing earth resistance.  
(CO2) 5 marks
- iii) Explain Indian standard specification and Indian electricity rule for earthing. (CO2) 5 marks
- iv) Explain how the earthing saves the human body from electric shock. (CO2) 3 marks
- Q.2 Draw the schematic and wiring diagram for a three phase induction motor that is to be started and stopped by automatic star delta starter with the help of two push buttons. Also include the overload and short circuit protection to the motor. (CO1) 25 marks

OR

Draw the schematic and wiring diagram for a process in which two induction motors starts in sequence i.e. one after the other by using time delay relay. (CO1)

- Q.3 Draw the Key Diagram of 33KV substation along with a list of various symbol of equipments used. (CO4) 20 marks
- Q.4 a) Explain any five AutoCAD commands  
(CO5) 10 marks
- b) Draw the schematic and wiring diagram for DOL starting of a 3-phase induction motor  
(CO1) 10 marks
- Q.5 Draw the diagram of pipe earthing. Also provide the list of material used for plate earthing.  
(CO3) 20 marks

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