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Roll No. 15 EEREEOSP

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B.Tech.VIII Semester (Main&Back) Examination, April - 2019
Electrical And Electronics Engineering
8EX3A Protection of Power System

Common with EE,EX

Time: 3 Hours

Maximum Marks: 80 Min. Passing Marks: 26

Instructions to Candidates:

Attempt any Five questions, selecting One question from each unit. All Questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly). Units of quantities used/calculated must be stated clearly.

Use the following supporting material is permitted during examination.

1. Scientific Calculator.

Unit -T

- a) Justify why overlapping zone of protection are required for protection purpose.

 Explain importance of primary and backup protection.

 (8)
 - b) Describe the transient errors in the CT and CVT by drawing the transient response and giving the suitable mathematical treatment. (8)

(OR)

- 1. a) Justify qualities and functional characteristics required by a relay with respect to protection. (8)
 - b) Define the following terms concerning to a relay: (2+2+2+2=8)
 - i) Discrimination.
 - ii) Reliability of the relay.
 - iii) Selectivity.
 - iv) Sensitivity.

Unit - II

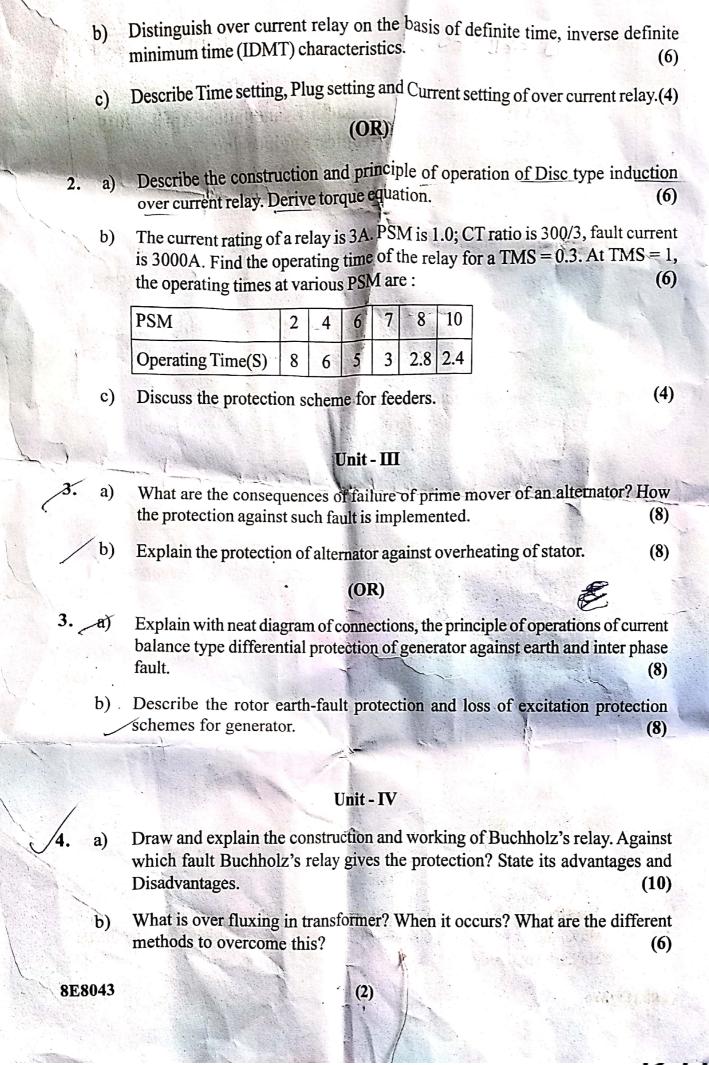
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2. a) Describe the construction, principle of operation of a directional over current relay. And how the 30°, 60° and 90° connections of directional over current relay are obtained. (6)

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(1)



- 4. a) What is magnetizing inrush current? What measures are taken to distinguish between the fault current and magnetizing inrush current? Discuss the protective scheme which protects the transformer against faults but does not operate in case of magnetizing inrush current.
 - b) Explain high impedance relay scheme for bus-bar protection. (6)

Unit - V

- 5. a) What are the possible causes of earth faults in an induction motor? Explain the application of earth fault relay for the protection of induction motor. (8)
 - b) Explain the importance and basic principle of distance protection of a transmission line. (8)

(OR)

- Describe and compare characteristics of impedance, reactance and mho relay with respect to arc resistance and power swings.

 (8)
 - b) Give the Scheme of distance protection of a three phase line. (8)

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