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**BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DEEE - SXITH SEMESTER EXAMINATION**

POWER SYSTEMS – III (SWITCH GEAR AND PROTECTION)

Time:3 Hours

Max.Marks:80

PART-A**10x3=30M**

Instructions: 1) Answer **all** questions. Each question carries **3** marks.
2) Answer should be brief and straight to the point and shall not exceed **five** simple sentences.

- 1) State any three factors responsible for arc formation.
- 2) State the faults that are generally occurred and their effects in a power system.
- 3) State the importance of current limiting reactor.
- 4) State any six important features of relays.
- 5) List the applications of impedance relay.
- * 6) List the possible faults in transformer and their effects.
- 7) Draw the diagram for protection of duplicate busbar system.
- 8) State the effects of pilot wires in transmission line protection scheme
- 9) List the types of surges.
- 10) List any six demerits of neutral grounding.

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PART-B

5x10=50M

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Instructions: 1) Answer any **Five** questions. Each question carries **Ten** marks.

2) Answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) Explain the working of sulphur hexafluoride circuit breaker with a neat diagram.
- 12) A three phase transmission line operating at 10 kV and having a resistance of 1 ohm and reactance of 4 ohms, is connected to 10 MVA Alternator having a reactance of 10% , through 5 MVA step-up transformer having a reactance of 5%. Calculate the short circuit kVA fed to a symmetrical fault occurred between phases of load end of the transmission line.
- 13) Explain the working of induction type over current relay with a neat diagram.
- 14) Explain the earth fault protection for Alternator rotor with a neat diagram.
- 15) Explain the working of field suppression protection of Alternator with a neat diagram.
- 16) Explain the protection of transmission lines using definite distance and time distance relays with neat diagram.
- * 17) Explain the working of valve type lightning arrestor with a neat diagram.
- 18) Briefly explain the following.
 - a) current setting and plug setting 5M
 - b) protection of parallel feeders using directional relays 5M

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