C14-EE-**603**

4743

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE-2019

DEEE – SIXTH 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 **three** marks.
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1) State any three properties of sulphur hexafluoride gas.

2) State the working principle of minimum oil circuit breaker.

3) State the importance of short circuit kVA.

4) Classify the relays based on principle of operation.

5) List the uses of attracted armature type relay.

6) List the precautions to be taken for applying differential protection of transformers.

7) What is pilot wire?

8) What is the relation between number of sections and minimum relay time.

9) List any six types of lightning arrestors.

10) List any three reasons for the cause of surges.

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PART-B

5x10=50M

Instructions: 1) Answer any **five** questions.
2) Each question carries **ten** marks.
3) Answers should be comprehensive and the criteria for valuation is the content but not the length of answer.

11) Explain the working of air break circuit breaker with a neat diagram.

12) A 10MVA, 6.6kV three phase star connected alternator having a reactance of 20% is connected through a 5 MVA, 6.6kV/33kV transformer of 10% reactance, to a transmission line of length 50km having a resistance and reactance per condutor per kilometer of 0.2 ohm and 1 ohm respectively. Calculate the short circuit current fed to a symmetrical fault occurred between phases of load end of the transmission line.

13) Explain the working of impedance relay with a neat diagram.

14) Explain the split phase protection of alternator against inter turn short circuits with a neat diagram.

15) Explain the differential protection of transformer with a neat diagram.

16) Explain the differential protection of parallel feeders of transmission lines with neat diagram.

17) Explain the working of rod gap type lightning arrestor with a neat diagram.

18) Briefly explain the following:
(a) Thermal relay
(b) Protection of ring main feeders using directional relays

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