(DEE 326)

B.Tech DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

ELECTRICALS AND ELECTRONICS

Paper - VI : Switch Gear & Protection

Time : 3 Hours **Maximum Marks : 75**

Answer Question No.1 Compulsory ***(15 × 1 = 15)***

Answer ONE question from each unit ***(4 × 15 = 60)***

1) a) How does a circuit breaker differ from a fuse?

b) Write short notes on primary protection.

c) Define the terms pickup value, making capacity and breaking capacity.

d) What are the disadvantages of SF_6 circuit breakers?

e) Define arc voltage, RRRV and active recovery voltage.

f) What do you mean by internal fault and external fault?

g) Explain the need for the transformers and transmission line protection.

h) Write short notes on differential protection.

i) Write any four merits of vacuum circuit breaker.

j) List the routine tests conducted on circuit breakers.

k) Explain briefly about reactance grounding.

l) Draw the block diagram of Definite time static over current relay.

m) Define bus bar. Explain the importance of bus bar protection.

n) Write short notes on power system earthing.

o) List the classification of relays.

UNIT - I

2) What is universal torque equation? Using this equation derive the following characteristics

a) Impedance relay

b) Reactance vrelay

c) mho relay

OR

3) a) Explain the constructional details and operation of attracted armature relay.

b) Draw the constructional details of non-directional induction relay.

UNIT - II

4) Discuss the principle of arc interruptions in

a) AIR BLAST CIRCUIT BREAKERS

b) SF_6 CIRCUIT BREAKERS

OR

5) Explain the phenomenon of current chopping in a circuit breaker. What measures taken to reduce it.

UNIT - III

6) Explain with a neat circuit diagram of the percentage differential protection scheme to protect Y-Δ transformer.

OR

7) a) Describe the various methods of grounding.

b) Write short notes on Tran slay scheme.

UNIT - IV

8) What is comparator? Explain any two coincidence phase comparators in detail.

OR

9) Explain the types of static differential relays.

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