

B.Tech. SEM -VI Electrical 2014 Course (CBCS) : WINTER - 2018

SUBJECT: SWITCHGEAR AND PROTECTION

Day: Tuesday
Date: 13/11/2018

W-2018-2468

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume stable data if necessary.
- 4) Use of non programmable **CALCULATOR** is allowed.

- Q.1** a) With neat diagram explain construction and working of MOCB. (06)
b) Explain essential qualities of protective system. (04)

OR

- Q.1** a) Explain construction, working and applications of VCB. (06)
b) What is Resistance Switching in circuit breaker? (04)

- Q.2** a) From the first principle derive the torque equation for induction type relay. (06)
b) What is primary and backup protection? (04)

OR

- Q.2** a) Explain the construction and working of induction type directional power relay. (06)
b) State the advantages and disadvantage of static relays over electromagnetic relays. (04)

- Q.3** a) Explain with neat diagram the percentage differential protection (Merz Price protection scheme) of transformers. (06)
b) Draw and explain single phasing protection for 3 ph Induction motor. (04)

OR

- Q.3** Explain the protection of alternator against (10)
i) Loss of prime mover
ii) Inter-turn faults

- Q.4** a) With neat diagram explain the high impedance differential relay used for bus bar protection. (06)
b) Explain the advantages and disadvantages of three stepped distance protection of transmission line. (04)

OR

- Q.4** Explain the principle of distance protection used in case of transmission lines also explain the R-X diagram of plain impedance relay. (10)

- Q.5** What are different types of over voltages which may occur on power system? Explain various internal causes in detail. (10)

OR

- Q.5** With neat diagram explain the Thyrite type lightning arrester used in over voltage protection. (10)

- Q.6** a) Draw the layout 132 kV/ 22 kV substation and explain the same. (06)
b) What are the main requirements of site for substation? (04)

OR

- Q.6** What are the assumptions made for conducting short circuit studies with the help of PC applications? (10)

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