

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech., Summer 2017-18 Examination

Semester: 2
Subject Code: 03203151
Subject Name: Power System Protection

Date: 18/05/2018
Time: 2:00 pm to 4:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Explain sequence of events in single shot reclosing relay for permanent fault **(05)**
 B) Explain the classification of auto re-closing relays. **(05)**
 C) Define Sampling theorem and sample hold circuit. **(05)**
- Q.2** **Answer the following questions.** (Attempt any three) (Each five mark) **(15)**
- A) What is compensation In transmission line, explain:
 1. Series compensation. 2. Degree of compensation
- B) Explain Surge protection circuit.
- C) Draw and discuss flowchart for determination of Primary-backup relay pairs using LINKNET structure.
- D) Discuss the Factors to be considered during reclosing
- A) An IDMT type over current relay is used to protect a feeder through 500/1 A CT. The relay has a PS of 125% and TMS = 0.3. Find thr time of operation of the said relay if a fault current of 5,000A flows through the Feeder. Make use of the following characteristic **(07)**
- | | | | | | | |
|------|----|---|-----|-----|----|-----|
| PSM | 2 | 3 | 5 | 8 | 10 | 15 |
| Time | 10 | 6 | 4.5 | 3.2 | 3 | 2.5 |
- B) Why auto-reclosing is used? Write advantages of auto re-closing system. **(08)**
- OR**
- B) Explain gas actuated transformer protection **(08)**
- Q.4** A) List out the advantages & disadvantages of linknet structure. **(07)**
- OR**
- A) What is differential protection? Explain differential protection of transformer **(07)**
 B) Using the flow chart and algorithm find out the backup relay of primary relay R1 for the single line diagram of power system shown in fig **(08)**

