

# Question Bank (I- scheme)

## Unit Test I

Course: SWITCH GEAR AND PROTECTION

Code: (22524)

Abbreviation - SAP

Semester: 5I

Program: EE

### UNIT I: BASICS OF PROTECTION (10 M)

#### 2 Marks Questions:

- 1) Classify current limiting reactors based on location.
- 2) Differentiate between symmetrical and unsymmetrical faults .(any two points)
- 3) State the function of current limiting reactor.
- 4) State the difference between normal and abnormal conditions in power system.
- 5) State four functions of protective system.

#### 4 Marks Questions:

- 6) With the help of suitable diagram explain the importance of back-up protection.
- 7) Explain in brief four causes of faults in the power system.
- 8) With a neat diagram explain generator reactors.

### UNIT II: CIRCUIT INTERRUPTION DEVICES (16M)

#### 2 Marks Questions:

- 9) Define i) making capacity ii) short time rating of circuit breaker.
- 10) List any two advantages and two disadvantages of vacuum circuit breaker.
- 11) State the factors to be considered while selecting MCCB for motor protection.
- 12) State the need of insulation coordination.

#### 4 Marks Questions:

- 13) Define the following terms related to current interrupting devices: i) arc voltage, ii) re-striking voltage, iii) recovery voltage and iv) RRRV
- 14) Compare HRC fuse and Circuit breakers as interrupting devices on any four points.

- 15) Describe with neat sketch the arc extinction in SF6 circuit breaker.
- 16) Define following terms related to CB:
- i) Rated normal current ii) Rated breaking current:
  - iii) Short time rating iv) Symmetrical breaking current
- 17) With the help of neat sketch explain the working of ELCB.
- 18) Compare the MCCB with ELCB on any three points. State the application of the RCBO.
- 19) Explain with neat sketch pantograph type of isolator. State the sequence of operation of isolator, CB and earthing switch while opening and closing.

### UNIT III: PROTECTIVE RELAYS (16M)

#### 2 Marks Questions:

- 20) State any two disadvantages of static relays.
- 21) List the types of relays based on i) Characteristics ii) Scheme
- 22) Draw the block diagram of static relays.
- 23) Define the terms based on relay terminology i) Pickup current ii) reset current

#### 4 Marks Questions:

- 24) Explain any six quality requirements for better protective relaying
- 25) With a neat sketch explain solenoid type over current relay.
- 26) State any four salient features of microprocessor based protection relay. Draw block diagram of microprocessor based over current relay.
- 27) Explain PSM and TSM related to protective relays.
- 28) Explain time-current characteristics of IDMT relay
- 29) With the help of neat sketch explain the operation of distance protection scheme for the transmission line.
- 30) A 5A , 3Sec overcurrent relay has a plug setting of 125% and time setting multiplier of 0.8. The supplying CT is rated for 400:5A. Calculate the time of operation of the relay for a fault current of 4000A.

PSM	1.5	2.5	3	5	8	10.5
Time in Sec	10	8	5	3	2	1

