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Question Paper Code: 55305

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fifth Semester

Electrical and Electronics Engineering

01UEE505 - PROTECTION AND SWITCHGEAR

(Regulation 2013)

Duration: 1:15hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Switchgear is an apparatus
 - (a) Used for switching, controlling and protecting the electrical circuits and equipments
 - (b) It detects the faults only
 - (c) It corrects the faults only
 - (d) all the above
2. For symmetrical network, the neutral current is
 - (a) Zero
 - (b) infinity
 - (c) Maximum
 - (d) None of these
3. The operating time for a high speed relay is
 - (a) 1 sec
 - (b) 1 milli sec
 - (c) 1 to 2 cycles
 - (d) 10 to 15 cycles
4. In distance relay the operation depends upon
 - (a) voltage
 - (b) current
 - (c) Fault voltage to current ratio
 - (d) All the above

5. Which section of a power system generally suffers from more faults as compared to the remaining?
- (a) Generators (b) Transformers
(c) To Transmission lines (d) Underground cables
6. A large size alternator is protected against overloads by providing
- (a) over current relay (b) Temperature sensitive relay
(c) Thermal relay (d) None of these
7. Protective relays can be designed to respond to _____
- (a) Light intensity, impedance (b) Temperature, resistance, reactanc
(c) Voltage and current (d) All of these
8. Moving parts are absent in
- (a) Static relay (b) Electromagnetic relay
(c) Induction type relay (d) Alternator
9. For extra high voltage lines which circuit breaker is preferred?
- (a) Bulk oil circuit breaker (b) Vacuum circuit breaker
(c) SF6 gas circuit breaker (d) Minimum oil circuit breaker
10. The voltage appearing across the contacts after opening of the circuit breaker is called
- (a) Recovery voltage (b) Surge voltage
(c) Operating voltage (d) Arc voltage

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. With neat sketch explain primary and back-up protection. What are the various methods of providing back-up protection? (8)
12. Briefly explain the differential relay, negative sequence relay with neat diagram. (8)
13. Explain with a neat diagram the application of Merz price circulating current principle for the protection of the alternator. (8)
14. Describe the various functional circuits in a static relay with a help of block diagrams. Explain the function of various blocks. (8)
15. With neat sketch, explain the SF6 circuit breakers. (8)