A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 56302

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Sixth Semester

Electrical and Electronics Engineering

15UEE602–PROTECTION AND SWITCH GEAR

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The material used for fuse must have CO1-R

   (a) The low melting point and high specific resistance

   (b) The low melting point and low specific resistance

   (c) High melting point and low specific resistance

   (d) Low melting point and any specific resistance

2. When a line-to-line fault occurs, the short circuit current of an alternator depends upon its CO1-R

   (a) Sub-transient reactance (b) Transient reactance

   (c) Synchronous reactance (d) Short circuit reactance

3. Directional relays are based on the flow of CO2-R

   (a) Power (b) Current (c) Voltage Wave (d) None of the above

4. A differential relay measures the vector difference between CO2-R

   (a) Two current (b) Two voltage (c) Two similar quantities (d) Any of the above

5. Large internal faults are protected by CO3-R

   (a) Merz price percentage differential protection

   (b) Mho and ohm relays

   (c) Horn gaps and temperature relays

   (d) Earth fault and positive sequence relays

6. A transmission line is protected by CO3-R

(a) Time graded and current graded over current protection

(b) Distance Protection

(c) Both 1 and 2

(d) None of the above

7. Basic relay connection requirement is that the relay must operate for CO4-R

(a) Load (b) Internal faults (c) Both (a) and (b) (d) None of these

8. Instantaneous relay should operate within CO4-R

(a) 0.0001 sec (b) 0.001 sec (c) 0.01 sec (d) 0.1 sec

9. The arcing contacts in a circuit breaker are made of CO5-R

(a) Copper tungsten alloy (b) Porcelain

(c) Electrolytic copper (d) Aluminum alloy

10. SF6 gas CO5-R

(a) Is yellow in color (b) Is lighter than air

(c) Is nontoxic (d) Has pungent small

PART – B (5 x 2= 10Marks)

11. Show the need for protective schemes in power system? CO1-R

12. List the different types of electromagnetic relays. CO2-R

13. Define the term burden on CT. CO3-R

14. Give the advantages of static relays. CO4-R

15. Differentiate AC and DC circuit breaking. CO5-R

PART – C (5 x 16= 80Marks)

16. (a) Describe the different faults in power system. Which of these are more frequents? CO1-App (16)

Or

(b) Explain the overlapping of protective zones with neat sketch. CO1-App (16)

17. (a) Discuss the construction and operating principle of over current relay with directional scheme. CO2-App (16)

Or

(b) Explain the construction and working principle of negative sequence relay with a neat diagram. CO2-Ana (16)

18.	(a)	Compare CT and PT. What are the applications of CT and PT?	CO3-Ana	(16)
		Or		
	(b)	Classify different protection schemes normally used for protection of a power transformer from internal faults? Discuss one of them in brief.	CO3-Ana	(16)
19.	(a)	Illustrate and Explain with neat Block diagram of Numerical relays.	CO4-U	(16)
		Or		
	(b)	Compose the problems arising in differential protection in power transformer and how are they overcome?	CO4-Ana	(16)
20.	(a)	Derive an expression for Restriking voltage and rate of rise of restriking voltage.	CO5-U	(16)
		Or		
	(b)	Describe the constructional details of SF6 circuit breaker and its operation. Give its advantages and disadvantages.	CO5-U	(16)