



B.E/B.TECH DEGREE EXAMINATIONS: APRIL /MAY 2024

(Regulation 2018)

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

U18EET6002: Power System Protection and Switchgear

COURSE OUTCOMES

- CO1:** Understand the principles of protection schemes and relays against faults.
CO2: Classify the various types of circuit breakers and their working
CO3: Understand the protection schemes for different power system components.
CO4: Describe and demonstrate the basic principles of digital protection.
CO5: Understand system protection schemes, and the use of wide-area measurements.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|---|-----|-------------------|
| 1. Classify the relays in detail. | CO1 | [K ₂] |
| 2. Infer the merits of neutral grounding. | CO1 | [K ₂] |
| 3. What is meant by restriking voltage? | CO2 | [K ₁] |
| 4. List the factors to be considered for to the selection of circuit breaker. | CO2 | [K ₂] |
| 5. Infer the role of CT and PT in protection system. | CO3 | [K ₂] |
| 6. Name the schemes for bus bar protection. | CO3 | [K ₁] |
| 7. How a numerical over current relay works? | CO4 | [K ₂] |
| 8. Write the principle of distance protection. | CO4 | [K ₂] |
| 9. Draw the block diagram of under frequency relay. | CO5 | [K ₂] |
| 10. Summarize the features of WAMS. | CO5 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|--|----|-----|-------------------|
| 11. a) Describe the zones of protection in detail. | 6 | CO1 | [K ₂] |
| b) How an electromagnetic relay is working and explain any one type in detail. | 10 | CO1 | [K ₂] |

12.	a)	Summarize the benefits of current chopping.	6	CO2	[K ₂]
	b)	Explicate the construction and working of SF ₆ circuit breaker.	10	CO2	[K ₂]
13.		Discuss the transformer protection scheme with relevant circuit diagram.	16	CO3	[K ₂]
14.	a)	Explain the distance protection scheme in transmission lines by digital technique.	10	CO4	[K ₂]
	b)	Classify time based over-current relays.	6	CO4	[K ₂]
15.	a)	Describe the functions of PMUs in power system protection.	8	CO5	[K ₂]
	b)	Discuss the WAMS adopted for power system protection.	8	CO5	[K ₂]
16.	a)	Classify the types of MCB curves.	6	CO2	[K ₂]
	b)	With neat sketch discuss the working of vacuum circuit breaker.	10	CO2	[K ₂]
