PRN:		Course Code :	ELE2604

Third Year **B. Tech** End Semester Examination Summer 2023

Switchgear and Protection

Day and Date: Thursday, 22/06/23 Max Marks: **100**

Time : 10:30 to 1:30 pm Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Draw and explain air blast circuit breaker.	08	L2	CO1
	b)	Write a note on microprocessor-based relay.	08	L2	CO1
		OR			
	b)	Draw and explain bulk oil circuit breaker.	08	L2	CO1
Q.2		**Attempt the following**			
	a)	Draw and explain different types of fuse used in protection system.	08	L4	CO1
	b)	Write a note on following terms of relay 1. Selectivity 2. Sensitivity 3. Reliability 4. Speed of operation	08	L4	CO2
		OR			
	b)	Draw and explain in short 1. Hinged armature type relay 2. Balanced beam relay	08	L2	CO2
Q.3		**Attempt any two from the following**			
	a)	Explain following terms with proper diagram 1. Arc 2. Arc voltage 3. Restriking voltage 4. Recovery voltage	08	L3	CO2
	b)	Draw and explain numerical relay.	08	L4	CO3
	c)	Write a detailed note on plug setting multiplier and time multiplier setting of relays.	08	L3	CO3
Q.4		**Attempt any two from the following**			
	a)	Draw and explain radial and ring main protection.	08	L4	CO3
	b)	Draw and describe the working of differential protection for any device of power system.	08	L4	CO3

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	c)	Explain how percentage differential protection is applied to transformer.	08	L3	CO3
Q.5		**Attempt any Two of the following**			
	a)	Write a note on Buchholz relay for incipient faults.	09	L4	CO4
	b)	Write a note on restricted earth fault protection for stator winding by differential system.	09	L2	CO4
	c)	Write a short note on 1. Loss of excitation of generator 2. Protection against motoring	09	L3	CO4
Q.6		**Attempt any Two of the following**			
	a)	Draw and explain numerical relay for transmission line	09	L2	CO4
	b)	Write a short note on 1. Surge arrester 2. Causes of over voltage	09	L3	CO4
	c)	Write a short note on 1. Protection against stator interturn fault 2. Stator overheating protection	09	L2	CO4

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