

HALL TICKET NUMBER

--	--	--	--	--	--	--	--	--	--

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
SWITCHGEAR AND PROTECTION
(EEE Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-AAnswer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) What is restriking voltage?	[2M]	1	1
	b) Demonstrate the basic principle of relay?	[2M]	2	2
	c) List out different protection schemes of Transformers?	[2M]	3	1
	d) Discuss what is need of feeder protection?	[2M]	4	1
	e) Discuss Why earth wire is provided in overhead transmission lines?	[2M]	5	1

PART-BAnswer **One Question from each UNIT (5X10=50M)**

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Discuss Current chopping and Resistance switching?	[5M]	1	6
	b) Explain the operation of oil circuit breaker with neat diagram?	[5M]	1	2
OR				
3.	a) Explain the concept of auto reclosing of circuit breaker?	[5M]	1	2
	b) Demonstrate the construction and working of an SF6 circuit breaker with sketch?	[5M]	1	2
UNIT-II				
4.	a) With the help of a neat sketch explain the working of an electromagnetic relay?	[5M]	2	2
	b) Explain the principle of operation of impedance relay?	[5M]	2	2
OR				
5.	a) Demonstrate about the basic requirements of a protective relay?	[5M]	2	2
	b) Derive the expression of universal torque expression of relays?	[5M]	2	3
UNIT-III				
6.	a) Explain protection schemes used for rotor earth fault of generator?	[5M]	3	2
	b) Explain the working of an electromagnetic relay with the help of a neat sketch?	[5M]	3	2
OR				
7.	a) Explain the concepts of design of CT ratio of transformers?	[5M]	3	2
	b) Explain about Buchholz relay protection scheme of transformers?	[5M]	3	2
UNIT-IV				
8.	a) Explain about concepts of TSM, PSM?	[5M]	4	2
	b) Explain about differential protection scheme of feeders?	[5M]	4	2
OR				
9.	a) Explain the concepts of feeder protection?	[5M]	4	2

	b)	Discuss in detail about the three-zone protection of transmission lines?	[5M]	4	6
UNIT-V					
10.	a)	Sketch Static over current relay? Explain its operation?	[5M]	5	2
	b)	Explain the operation of microprocessor based digital relays?	[5M]	5	2
OR					
11.	a)	Explain about protection against lightning and over voltages?	[5M]	5	2
	b)	Explain about various neutral grounding methods?	[5M]	5	2
