



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS
TRAINING AND RESEARCH
(DEEMED TO BE UNIVERSITY UNDER DISTINCT CATEGORY)
CHANDIGARH**

Ph.D. Entrance Examination - January 2025

Subject / Branch / Department :	ELECTRICAL ENGINEERING
Roll No. :	
Candidate Name :	
Date of Examination :	

Maximum Marks: 25 (There is no negative marking)

- Notes:** (a) Only one option to be tick-marked out of the four options given as answer
(b) The Candidate must put his/her signature with date at the bottom of each page
(c) For any rough work, please use ONLY back-sides of pages which are left blank

Q1. The reverse recovery current in a diode depends on
(a) Forward field current
(b) Storage charge
(c) Temperature
(d) PIV
Q2. In the conduction mechanism of the Schottky diode
(a) Only electrons can participate
(b) Only holes can participate
(c) Both holes and electrons can participate
(d) Neutrons can participate
Q3. The RMS value of a half-wave rectified symmetrical square-wave current of 2A is
(a) $\sqrt{2}A$
(b) 1 A
(c) $\frac{1}{\sqrt{2}} A$
(d) $\sqrt{3} A$
Q4. In a thyristor, the ratio of holding current to latching current is
(a) 0.4
(b) 2.5
(c) 1.0

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(d)	4.00
Q5.	In a single-phase full converter, the number of SCRs conducting during overlap is
(a)	1
(b)	2
(c)	3
(d)	4
Q6.	The time constant for an RL series circuit is given by
(a)	R/L
(b)	$1/RL$
(c)	RL
(d)	L/R
Q7.	The torque angle δ is defined as the angle between
(a)	stator field axis and resultant field axis.
(b)	rotor field axis and resultant field axis.
(c)	stator field axis and rotor field axis
(d)	stator field axis and mutual field axis
Q8.	The type of DC generator used for arc welding purposes is a
(a)	series generator
(b)	shunt generator
(c)	cumulatively compounded generator.
(d)	differentially compounded generator.
Q9.	In a round-rotor alternator, reactive power is maximum at a load angle of
(a)	90 degrees
(b)	180 degrees
(c)	0 degrees
(d)	45 degrees
Q10.	Induction generators deliver power at
(a)	Unity pf
(b)	Zero pf lagging
(c)	Leading pf
(d)	Lagging pf
Q11.	The magnetic-inrush-current in a transformer is rich in
(a)	3 rd harmonics
(b)	5 th harmonics

(c)	7 th harmonics
(d)	2 nd harmonics
Q12. Corona loss is less when the shape of the conductor is	
(a)	Circular
(b)	Flat
(c)	Oval
(d)	Independent of shape
Q13. The coefficient of reflection of current for an open-ended line is	
(a)	1.0
(b)	0.5
(c)	-1.0
(d)	0
Q14. The Buchholz relay protects a transformer from	
(a)	All types of internal fault
(b)	A turn-to-turn fault
(c)	Winding to winding fault
(d)	Line-to-line fault
Q15. Load flow study is carried out for	
(a)	Fault calculation
(b)	Stability studies
(c)	System planning
(d)	Load frequency control
Q16. Which number system has a base 16	
(a)	Hexadecimal
(b)	Octal
(c)	Binary
(d)	Decimal
Q17. Which of these sets of logic gates are known as universal gates?	
(a)	XOR, NAND, OR
(b)	OR, NOT, XOR
(c)	NOR, NAND, XNOR
(d)	NOR, NAND

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Q18. In the toggle mode, a JK flip-flop has	
(a)	J = 0, K = 1
(b)	J = 1, K = 1
(c)	J = 0, K = 0
(d)	J = 1, K = 0
Q19. Which of the given device used in speed control of a DC motor?	
(a)	NPN transistor
(b)	PNP transistor
(c)	FET
(d)	SCR
Q20. Which of the given logic family provide minimum power dissipation	
(a)	JFET
(b)	ECL
(c)	CMOS
(d)	TTL
Q21. Which of the following is the most popular method for measuring low resistance?	
(a)	Ducter ohmmeter method
(b)	Kelvin double bridge method
(c)	Ammeter-voltmeter method
(d)	Potentiometer method
Q22. A multiplier is	
(a)	Non-capacitive
(b)	Capacitive
(c)	Non-inductive
(d)	Resistive
Q23. The windings of a C.T. are	
(a)	Tied together
(b)	Shorted
(c)	Wound over one another
(d)	Grounded
Q24. Which of the following device is used to measure power in A.C. circuits?	
(a)	Ammeter

(b)	Wattmeter
(c)	Voltmeter
(d)	Ohmmeter
Q25. For domestic purposes, how are circuits connected?	
(a)	Straight
(b)	Parallel
(c)	Serial
(d)	Series

Answer Key (Electrical)

1	A
2	A
3	A
4	A
5	D
6	D
7	C
8	D
9	C
10	C
11	D
12	A
13	C
14	A
15	C
16	A
17	D
18	B
19	D
20	C
21	B
22	C
23	C
24	B
25	B

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