		На	II Ticket Number :														
	L	Code: 19AC12T								R-19	-19						
			I B.Tech. I Semester Supplementary Examinations November 2023														
			Applied Physics														
		(Common to EEE & ECE)											т:	mo, 3 F			
ice.			Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14									ne: 3 Hours = 70 Marks)					
oract								***	ጥ ጥ ጥ ጥ 						Marks	со	BL
malp																	
d as	1.		Explain the Fraunhofer diffraction due to double slit with necessary theory and draw the intensity distribution curve.											14M	CO1	L2	
reate				ony c		outio	i cui	OR	2							001	
be ti	2.	a)	Describe the const	ructi	on ar	nd th	eory	of qu	larte	r and	half	wav	e pla	tes.	8M	CO1	L2
, will		b)	Calculate the minim					-		or a l	ight l	beam	n of w	vavelength,	CN 4	004	10
8=40			=589.3mm if μ_e = 1.48640 and μ_o = 1.65833. 6M CO1										COT	L3			
32+	3.	a)	Explain the hystere	esis l	oop	(B-H)		-		Inetic	: mat	erial	s in c	detail.	9M	CO2	L2
n eg.		b)	A circular loop of c		•	` '			-								
vritteı			mA. Calculate the	magi	netic	mon	nent			d wit	h the	loop).		5M	CO2	L3
v suc	4.	a)	Distinguish betwee	n so	ft an	d har	d ma			atoria	ale				6M	CO2	L4
quatic	4.	b)	What are the engir					•				rials	2		4M	CO2	L4 L1
or ec		c)	Calculate the mag		• ·	-			-					c material		001	
evaluator and/or equations written eg. 32+8=40, will be treated as malpractice.		,	placed in a magne	•			•						•				
lator			is -0.42x10 ⁻³ .												4M	CO2	L3
evalı	5.	a)	Explain optical fibe	r cor	nmu	nicat		JNIT-		h hlo	ck di	aara	m		10M	CO3	L2
	5.	 a) Explain optical fiber communication system with block diagram. b) An optical fiber has a core and cladding materials of refractive index 1.55 and 										005	LZ				
ppe		- /	1.50 respectively a					•									
Any revealing of identification, appeal to			aperture.					OR	•						4M	CO3	L3
ficati	6.		State and prove th	e Sto	oke's	and	Gau			m					14M	CO3	L2
denti	0.			0.010		ana		JNIT-									
g of ic	7.	a)	Classify the solids	into	ins.	ulato	rs, s	emic	ondu	ctors	anc	l cor	nduct	ors based			
salinç			on its energy band												6M	CO4	L3
reve		b)	Explain electrical c	ondu	ictivi	ty in	semi	cond OR		ſS.					8M	CO4	L2
. Any	8.	a)	Deduce expressior	n for	drift	and o	diffus			nt in :	semi	cond	ucto	rs.	8M	CO4	L3
N	-	b)	Explain the fermi e											-	6M	CO4	L2
		ŗ			-		-	NIT-Y									
	9.	a)	Define supercondu				the	appli	catio	ns of	sup	ercor	nduc	ors.	6M	CO5	L3
		b)	Classify the superc	cond	uctor	S.		0							8M	CO5	L2
	10	a)	Discuss about therr	nal r	nech	anica	al, an	OR d opt		orone	rties	of na	nom	aterials	6M	CO5	L3
		b)	Analyze the cha					-	-							200	20
		,	microscope.								-			-	8M	CO5	L4
								*	**								

		На	II Ticket Number :						
	L			R-19	>				
	•		de: 19A411T I B.Tech. I Semester Supplementary Examinations November Essentials of Electrical & Electronics Engineering	2023					
	(Common to EEE & ECE) Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14								
			UNIT-I						
	1.		What are the types of resistors? Explain any three with neat diagrams.	14M	CO1				
	2.		Explain the following with neat diagrams						
			a) Fixed value resistors b) Fixed value capacitors UNIT-II	14M	CO1				
	3.	a)	State and explain super position theorem.	6M	CO2				
		b)	Find current through 2 resistor using super position theorem for the circuit given below. $10V + \frac{4}{-1} + 5V$						
			OR	8M	CO2				
	4.	a) Þ)	State and explain Kirchhoff's laws.	7M	CO2				
:		b)	State and explain maximum power transfer theorem. UNIT-III	7M	CO2				
į	5.	a) L)	Explain the operation of Zener diode in forward biased mode	8M	CO3				
		b)	If the forward voltage applied to a silicon diode at 30° C is 0.8V. Find the value of the forward current, if the reverse saturation current is 50nA. take =2. OR	6M	CO3				
	6.		Explain the Extrinsic Semiconductors and Intrinsic Semiconductors with neat sketch and compare them.	14M	CO3				
	7.		Explain the principle and operation of section filter with bridge rectifier and also derive an expression for its ripple factor OR	14M	CO4				
	8.		With neat waveforms explain the Full wave Rectifier with RC filter and also derive an expression for its ripple factor.	14M	CO4				
9	9.	a)	With neat diagram explain the various current components of NPN transistor.	8M	CO5				
		b)	Derive the relation between , and	6M	CO5				
			OR						
1	0.		With neat sketch explain the construction and operation of PNP and NPN transistors.	14M	CO5				

		Hall Ticket Number :	D 10		
		Code: 19A312T	R-19		
		I B.Tech. I Semester Supplementary Examinations November 2	2023		
		Engineering Graphics & Design (Common to EEE & ECE)			
		ne:3+	lours		
ice.		Answer any five full questions by choosing one question from each unit (5x14 =	= 70 M	arks)	
32+8=40, will be treated as malpractice.			Marks	со	BL
mal	4	UNIT-I			
ed as	1.	The major and minor axes of an ellipse are 120mm and 80mm. Draw an ellipse by Concentric Circles method	14M	CO1	L2
reate		OR			
l be t	2.	Construct a regular Hexagon by General Method, given the length of its side is 50mm	14M	CO1	L2
), wil			1-1101	001	
-8=4(3.	Draw a hypocycloid of a circle of 40mm diameter, which rolls inside another			
		circle of 160mm diameter, for one revolution counter clockwise. Draw a tangent & a normal to it at a point 65mm from the centre of the directing			
n eg		circle	14M	CO2	L2
aluator and/or equations written eg. 32+8=40, will be tre		OR			
v suc	4.	A circle of diameter 30mm rolls on a flat surface without slipping. Trace the path of a point lying on its circumference for one & a half revolution of the			
quati		circle.	14M	CO2	L2
or ec	-				
and/	5.	A point is 50mm from both the reference planes. Draw its projections in all possible positions	14M	CO3	L3
lator		OR			
	6.	A line AB, 50mm long, has its end A 20mm above the H.P and 30mm below the V.P. the line is inclined at 30 ^o to the H.P and at 45 ^o to the V.P. Draw the			
al to		projections	14M	CO3	L3
appe	_	UNIT-IV			
on, a	7.	A square ABCD of 40mm side has a corner on the HP and 20mm in front of the VP. All the sides of the squares are equally inclined to the HP and			
ficati		parallel to the VP. Draw its projections	14M	CO4	L3
denti	0	OR			
g of i	8.	A thin rectangular plate of sides of 60mm×30mm has its shortest side in the VP and inclined at 30 ^o to the HP. Project its top view if its front view is a			
ealin		square of 30mm long sides	14M	CO4	L3
Any revealing of identification, appeal to ev	9.	UNIT-V Draw the projections of a cone, base 75mm diameter and axis 100mm lying			
Any.	5.	on the HP on one of its generators with the axis parallel to the VP	14M	CO5	L3
2	10	OR			
	10.	Convert the following isometric view to orthographic views			
2. Any revealing of identification, appeal to ev		Sector Contraction of the sector of the sect			
		3 (20) 5 22			
		1 2 3			
		(Con the the			
		× 83 - 122			
		4	14M	CO5	L3

Hall	Ticket Number :	
Cod	e: 19A511T R-19	
	I B.Tech. I Semester Supplementary Examinations November 2023	
	Problem Solving and C Programming	
	(Common to All Branches) x. Marks: 70 Time: 3 Hou	
	wer any five full questions by choosing one question from each unit (5x14 = 70 Mark	
7 (115	*******	j
	UNIT-I	Mark
1. a)	What is a variable? What are the rules for declaring variables? Give examples of	
	valid and invalid variables	81
b)	What is an algorithm? Describe the characteristics of an Algorithm	61
	OR	
2. a)	What is data type? Explain basic data types and their sizes used in a C Language	71
b)	Draw the Flow Chart for finding a number is prime or not.	71
	UNIT-II	
3. a)	Write a C program to generate multiplication table	6
b)	Explain in detail about Control Statements?	8
	OR	
4. a)	Write a program in C to search for an element using linear search technique	71
b)	Explain about selection sort with suitable example.	71
	UNIT–III	
5. a)	Explain any five string manipulation library functions with examples.	91
b)	What is mean by recursion? Explain the advantages of recursive function.	51
	OR	
6.	What is function parameter? Explain different types of parameters in C functions.	14N
	UNIT–IV	
7.	What is dynamic memory allocation? Write and explain the different dynamic	
	memory allocation functions in C.	14
•	OR	
8. a)	What is a pointer? Explain how the pointer variable declared and initialized.	71
b)	Write advantages and disadvantages of pointers	71
•	UNIT-V	
9. a)	Explain how the structure variable passed as a parameter to a function with example.	71
b)	Write a C program to read and display a text from the file.	71
5)	OR	71
0. a)	What is a self-referential structure? Give an example.	51
b. a)	What is a file? Explain how the file open and file close functions	91
5)		51

На	all Ticket Number :			
Co	de: 19AC11T	R-19	,	
cu	I B.Tech. I Semester Supplementary Examinations Novemb Algebra and Calculus (Common to All Branches)	oer 2023		
	ax. Marks: 70 hswer any five full questions by choosing one question from each unit (5: *********	Time: 3 H x14 = 70 M		
	UNIT–I	Marks	CO	BL
1. a)	If $\}$ is an Eigen value of a non-singular matrix A , then $\frac{1}{3}$ is an Eigen va	lue		
	of $A^{^{-1}}$	7M	CO1	L2
b)	Find the Eigen values of A= $\begin{bmatrix} 1 & 2 & -1 \\ 0 & 2 & 2 \\ 0 & 0 & -2 \end{bmatrix}$	7M	CO1	L3
ı	OR			
2. a)	Find the rank of $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 & 4 \\ 7 & 10 & 12 \end{bmatrix}$			
b)	Solve $x + y + z = 4$, $2x + 5y - 2z = 3$, $x + 7y - 7z = 5$	7M		L3
	UNIT-II	7 101	CO1	L3
3.	Reduce the quadratic form $2x^2 + 2y^2 + 2z^2 - 2xy - 2yz + 2zx$ to canonic	ical		
	form by using orthogonal transformation.	14M	CO2	L3
4.	OR Diagonalize the matrix $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$			
		14M	CO2	L2
	If $z = u^2 + v^2$ and $u = at^2$, $v = 2at$, then find $\frac{dz}{dt}$	7M	CO3	L3
b)	Evaluate $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$, if $z = \log(x^2 + y^2)$ OR	7M	CO3	L3
6.	Find the maximum and minimum values of $x^3 + 3xy^2 - 15x^2 - 15y^2 + 72x$	14M	CO3	L3
7.	UNIT-IV Trace the curve $r = a \cos 2_{\pi}$ OR	14M	CO4	L4
8. a)	Expand sin x in powers of $(x - \frac{f}{2})$.			
b)	Using Maclaurin's series , expand $log(1+x)$ in powers of x.	7M 7M	CO4 CO4	L3 L3
				-

9. Show that $\int_{0}^{\infty} x^{4} e^{-x^{2}} dx = \frac{3\sqrt{f}}{8}$ 14M CO5 L3 OR 10. a) Evaluate $\int_{0}^{2} \int_{0}^{3} xy dx dy$ b) Evaluate $\int_{0}^{2} \int_{0}^{x} y dy dx$ ***