#### Code No: **R22A0001**

#### **MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Supplementary Examinations, January 2025

English

(CSE, CSE-AIML & CSE-DS)										
Roll No										

#### Time: 3 hours

#### Max. Marks: 60

Note: This question paper contains two parts A and B Part A is compulsory which carries 10 marks and Answer all questions. Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

		<b>PART-A ( 10 Marks)</b>	BCLL	CO(s)	Marks
		(Write all answers of this part at one place)			
1	А	She (drink) milk every day. (Fill in the blank with the correct	L1	CO-I	[1M]
		form of the verb).			
	В	Throughout his career he has demonstrated a(willing) to	L1	CO-I	[ <b>1M</b> ]
		compromise. (Fill in the blank with the correct suffix)			
	С	We visited the ancient palace yesterday, there we saw old manuscripts	L1	CO-II	[1M]
		written by saints, we tried but it was not <u>clear</u> enough to be			
		read.(Choose the right word)			
		1. Corrigible			
		2. Legible			
		3. Negligible			
	P	4. Illegible		<b>GO II</b>	543 <b>6</b> 3
	D	Choose the antonym of the given word.	L2	<b>CO-II</b>	
		Calamity =			
		a) adversity b) misfortune c) disaster d) fortune			
	Е	The boys are cleaning the playground. (Change the given sentence into	L2	CO-	[ <b>1M</b> ]
		passive voice).		III	
	F	The baby <u>smiled.</u> (Identify the underlined verb as transitive or	L2	CO-	[1M]
		intransitive).		III	
	G	I have fixed appointment with doctor. (Fill in the blanks with	L3	CO-IV	[1M]
		appropriate articles).			
	Η	what are you doing next weekend (Punctuate the given sentence	L3	CO-IV	[1M]
		appropriately)			
	Ι	Five miles long distance. (is/are) (Choose the right verb).	L2	CO-V	[1M]
	J	I couldn't decide ( which / witch ) colour shoes I wanted. (Choose the	L2	CO-V	[1M]
		right word).			
		PART-B (50 Marks)			
•		SECTION-I	10		[ <b>~</b> ] <b>/</b> ]
2	А	what does Rowling mean by ' what we achieve inwardly will change	L2	<b>CO-I</b>	[5M]

outer reality ?

	В	How many types of reading are there ? Describe the art of skimming and scanning along with examples	L2	CO-I	[5M]
		OR			
3	A B	What is Rowling's final message to people who enjoy privileges? What do you mean by skimming and scanning? Explain with examples.	L1 L2	CO-I CO-I	[5M] [5M]
4	A	Explain 'yellow wood' in the poem 'The Road not Taken' by Robert Frost	L2	CO-II	[5M]
	В	Write an essay of about 150 words on the topic "The effects of Social Media on Youth".	L3	CO-II	[5M]
		OR			
5	Α	Why can't the poet travel on both the roads ?	L5	CO-II	[5M]
	В	Write an essay of about 150 words on the topic "Glorifying negative characters in the movies - its effects on the viewers".	L3	CO-II	[5M]
6	А	SECTION-III What did CEO Nadella say in his first Email to Microsoft employees?	L1	CO- III	[5M]
	В	<ul> <li>Imagine you purchased a new smartphone online, but it arrived with a cracked screen and missing accessories. Write a formal complaint letter to the company addressing the issue. Your letter should include: <ol> <li>A clear description of the problem.</li> <li>Details of your purchase (e.g., order number, date of purchase).</li> <li>Your expectations for resolving the issue (e.g., replacement, refund, or repair)</li> </ol> </li> </ul>	L2	CO- III	[5M]
		4. A polite but firm tone.			
		Make sure your letter follows a proper structure.			
7	A	You accidentally missed an important meeting with your manager because you forgot to check your schedule. Write an email to your manager apologizing for your mistake. Your email should include: 1. A clear and polite apology. 2. An explanation of why the mistake happened	L6	CO- III	[5M]
		3. A plan or action to ensure it doesn't happened.			
		4. A request to reschedule the meeting, if appropriate.			
	В	<b>Read the following passage and answer the questions that follow:</b> Emma was excited about her new job at the bookstore. She loved being surrounded by books and talking to customers about her favorite stories. On her first day, she noticed that the manager, Mr. Lewis, seemed distracted, often staring out of the window and sighing. Despite this, he gave her detailed instructions and encouraged her to take her time learning the ropes. By the end of the week, Emma had already helped organize a book signing event and felt confident in her role. However, she couldn't shake the feeling that Mr. Lewis was troubled. When she asked a coworker, they mentioned that the bookstore was struggling financially, but Mr. Lewis hadn't shared this with the staff yet.	L2, L4	CO- III	[5M]

#### **Questions:**

- 1. Why does Emma feel confident by the end of her first week?
  - a) She received praise from Mr. Lewis.
  - b) She helped organize a successful event.
  - c) She made many sales.
  - d) She resolved the bookstore's issues.
- 2. What can be inferred about Mr. Lewis's behavior?
  - a) He is uninterested in running the bookstore.
  - b) He is worried about something but chooses not to share it.
  - c) He doesn't like Emma's work.
  - d) He is planning to leave the bookstore soon.
- 3. Why might Mr. Lewis have encouraged Emma despite being distracted?
  - a) He wanted to boost her confidence in the new job.
  - b) He was trying to hide his worries.
  - c) He wasn't paying attention to her progress.
  - d) He expected her to solve the store's problems.

# 4. What does the coworker's comment suggest about the bookstore's future?

- a) It is thriving and has no issues.
- b) It may face challenges if financial problems continue.
- c) It will likely close within a week.
- d) The staff will leave due to dissatisfaction.
- 5. What does the passage imply about Emma's character?
  - a) She is indifferent to others' problems.
  - b) She is observant and cares about the people she works with.
  - c) She is overly focused on her own success.
  - d) She is afraid to ask questions about her workplace.

#### SECTION-IV

8 A What was the main point of Abraham Lincoln's letter to his son's teacher L2 CO-IV [5M] ? Briefly explain.

#### L2 **B** Choose the correct phrasal verbs to complete the given sentences: **CO-IV** [5M]

1. I need to \_\_\_\_\_\_ the meeting because something urgent has come up."

- a) call off
- b) take off
- c) turn off
- d) put on

#### 2. She did not \_\_\_\_\_\_ her resignation until she found another job."

- a) turn in
- b) give up
- c) break down
- d) look up

3. He ran into his old friend at the grocery store."

- a) Bumped into someone physically
- b) Met someone unexpectedly
- c) Avoided someone on purpose
- d) Chased after someone
- **4.** The teacher decided to postpone the test until next week."
- a) give up
- b) put off
- c) take away
- d) carry on

5. She \_\_\_\_\_\_ eating chocolates after the doctor advised her not to.

- a) gave in
- b) gave up
- c) gave away
- d) gave up to

#### OR

9 A What is the main message of Abraham Lincoln's letter? CO-IV L1 **B** Read the following passage and answer the questions that follow: L4,L **CO-IV** [5M] Climate change is one of the most pressing issues facing the world 5 today. It is caused by the increase in greenhouse gases such as carbon dioxide in the atmosphere. These gases trap heat, leading to a gradual rise in global temperatures. This phenomenon is often referred to as global warming. The effects of climate change include melting polar ice caps, rising sea levels, and extreme weather events like hurricanes and droughts. To combat this crisis, governments and individuals must work together by reducing carbon emissions, adopting renewable energy sources, and promoting sustainable practices.

#### **Ouestions:**

1. Climate change is caused by an increase in \_\_\_\_\_ gases in the atmosphere.

[5M]

- a) noble
- b) greenhouse
- c) oxygen
- d) toxic
- 2. The gradual rise in global temperatures due to heat trapped by gases is known as \_\_\_\_\_.
  - a) acid rain
  - b) global cooling
  - c) global warming
  - d) air pollution
- One of the effects of climate change is melting \_\_\_\_\_\_.
   a) forests
  - b) polar ice caps
  - c) rivers
  - d) deserts
- 4. To address climate change, people are encouraged to adopt \_\_\_\_\_\_ energy sources.
  - a) renewable
  - b) fossil
  - c) nuclear
  - d) traditional
- 5. Extreme weather events mentioned in the passage include hurricanes and \_\_\_\_\_\_.a) earthquakes
  - a) earniquake
  - b) floods
  - c) droughts
  - d) tsunamis

#### **SECTION-V**

sustainable practices, such as reducing waste and supporting ecofriendly products. Preserving wildlife is not just about protecting animals but also about ensuring a healthy environment for future generations. The interconnectedness of all living beings makes it

10	А	Why is Dr. APJ Abdul Kalam described as "People's President"?	L2	CO-V	[5M]
	В	Write 5 guidelines to be followed while writing a Memo.	L1	CO-V	[5M]
		OR			
11	А	What qualities of Dr. APJ Abdul Kalam motivate you to become a	L1	CO-V	[5M]
		perfect professional?			
	В	Read the following passage and answer the questions that follow:	L4,	CO-V	[5M]
		Wildlife conservation is essential for maintaining the balance of	L5		
		ecosystems. Many animal and plant species are endangered due to			
		habitat loss, poaching, and climate change. Forests, wetlands, and			
		oceans, which serve as homes for these species, are often destroyed			
		for agriculture, urban development, or resource extraction.			
		Conservation efforts, such as wildlife sanctuaries, national parks, and			
		anti-poaching laws, play a vital role in protecting biodiversity.			
		Moreover, public awareness campaigns encourage people to adopt			

Page **5** of **6** 

essential to act responsibly toward nature.

#### Questions:

1.	What are some of the primary threats to wildlife mentioned in the passage?
2.	Why are wildlife sanctuaries and national parks important?
3.	How do public awareness campaigns contribute to wildlife conservation?
4.	What is the broader goal of preserving wildlife, according to the passage?

5. What is highlighted as the key reason for acting responsibly toward nature?

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**Code No: R22A0023** 

#### MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Supplementary Examinations, January 2025

Mathematics-I

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	Par	t B Con	sists of 5 S	ECTIO	NS	(One	SEC	CTIC	N fo	or ea	ch U	NIT)	. An	swe	r <b>FIVE</b> Qu	uestions,
	Cho	oosing (	ONE Questi	on from	n ea	ch Sl	ECT	ION	and	each	Que	estior	n car	ries	10 marks.	
			/ <b>**</b> / •/ •/	PART.	• <u>A (</u>	<u>10 N</u>	<u>/lark</u>	<u>(s)</u>					BCI	L	CO(s)	Marks
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	С				<u>[</u> 1	0	1						L	3	CO-II	[ <b>1M</b> ]
		Find t	he eigen va	ives of	0	2										
	D	What	is the natur	e of the	Ou	- adrat	ic fo	rm. ]	f 1.0	)1 a	are		L	2	CO-II	[ <b>1M</b> ]
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	Е	Define	e Total deri	vative of	of a :	funct	ion						L	l	CO-III	[1M]
	F	State '	Taylor's sei	ries of t	wo	varia	bles.						$\mathbf{L}^{1}$	l	CO-III	[1M]
	G	Write	the standar	d form	ofe	xact	diffe	renti	al eq	Juati	ons.		$\mathbf{L}^{1}$	l	CO-IV	[1M]
	Η	State 1	Law of natu	iral gro	wth								$\mathbf{L}^{1}$	l	CO-IV	[1M]
	Ι	When	does the ge	eneral s	olut	ion =	con	npler	nent	ary			L2	2	CO-V	[1M]
	J	Tuncti	$d^2y$	dy .		•							L2	2	CO-V	[1M]
		Solve	$\frac{1}{dx^2}$ + 6	$\frac{1}{dx}$ + 9	y =	0										
				PART-	- <b>B</b> (	<u>50 N</u>	lark	<u>(s)</u>								
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2	А				5	6	7	8	]				L	3	CO-I	[5M]
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					11	12	13	14								
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		into no	ormal form	nau IX	_			-	by r	eauc	ing it					

		OR			
3	А	Investigate for what values of $\lambda,\mu$ such that the following system will have(i) noSolution (ii) a UniqueSolution (iii) an infinite no.of solutions	L3	CO-I	[5M]
	В	$x+y+z=6$ , $x+2y+3z=10$ , $x+2y+\lambda z = \mu$ Using Gauss elimination method find a solution of the following system of Equations 10x-7y+3z+5u=6, $-6x+8y-z-4u=5$	L4	CO-I	[5M]
		$3x + y + 4z + 11u = 2, \qquad 5x - 9y - 2z + 4u = 7$			
4		<b>SECTION-II</b> Find the eigen values and the eigen vectors of the matrix $\begin{bmatrix} 8 & -6 & 2 \\ 6 & -7 & 1 \end{bmatrix}$	L3	CO-II	[10M]
		$A = \begin{bmatrix} -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$ OR			
5		Reduce the following quadratic form into canonical form by orthogonal reduction. And hence find its rank, index, signature and nature of the quadratic form $3x^2 + 5y^2 + 3z^2 - 2xy - 2yz + 2zx$	L5	CO-II	[10M]
6		Normalized and find the relation between them $u = \frac{x^2 - y^2}{x^2 + y^2}; v = \frac{2xy}{x^2 + y^2}$ are functionally	L3	СО-Ш	[10M]
		OR			
7		Find the maximum value of $r^2 + r^2$ since $r + r + r = 30$	L3	CO-III	[10M]
8		$\frac{x + y + z}{Siven x + y + z - 5a}$ $\frac{SECTION-IV}{Solve the differential equation}$ $\frac{(xy^3 + y)dx + 2(x^2y^2 + x + y^4)dy = 0}{(xy^3 + y)dx + 2(x^2y^2 + x + y^4)dy} = 0.$	L3	CO-IV	[10M]
9		OR The value of bacteria in a culture grew was initially 100 and increased to 332 in one hour. What was the value of the heaterin often $1(1/2)$ hours	L4	CO-IV	[10M]
10		Solve $\frac{d^2y}{dx^2} + 4y = \tan 2x$ by the method of variation of	L3	CO-V	[10M]
11		parameters OR Solve the differential equation $(D^3 - 6D^2 + 11D - 6)y = e^{-2x} + x^3$ .	L3	CO-V	[10M]

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Max. Marks: 60

Code No: R22A0021

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

## (Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Supplementary Examinations, January 2025 Applied Physics

EEE, ME, ECE	, IT	, AE	l, Ci	S&I	Г, С	SE-	CS	& C	SE-	IOT
Roll No										

#### **Time: 3 hours**

Note: This question paper contains two parts A and B

Part A is compulsory which carries 10 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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		<u>PART-A (10 Marks)</u>	BCLL	CO(s)	Marks
		(Write all answers of this part at one place)			
1	А	What is the purpose of the optical cavity in a laser	L3	CO-I	[1M]
	В	Name one advantage of using fiber optics over copper	L1	CO-I	[1M]
		cables			
	С	What is meant by wave-particle duality	L2	CO-II	[1M]
	D	If 100 volts is the potential with which an electron is	L5	CO-II	[1M]
		accelerated, what is the wave length associated with			
		electron			
	E	What is the difference between classical and quantum	L4	CO-III	[1M]
		free electron theory			
	F	Define Fermi level at T=0K	L1	CO-III	[1M]
	G	Why doping is done in semiconductors?	L2	CO-IV	[1M]
	Н	Define Hall effect?	L3	CO-IV	[1M]
	Ι	Define polarization in dielctrics	L1	CO-V	[1M]
	J	What is the difference between hard and soft magnetic	L4	CO-V	[1M]
		materials			
		PART-B (50 Marks)			
		SECTION-I			
2	А	Derive and explain Einstein's Coefficients for	L5	CO-I	[5M]
		absorption, spontaneous emission, and stimulated			
		emission			
	В	Discuss the applications of lasers in various fields	L4	CO-I	[5M]
		OR			
3	А	Explain the construction and working principle of an	L2	CO-I	[5M]
		optical fiber			
	В	Derive an expression for acceptance angle and numerical	L5	CO-I	[5M]
		aperture of an optical fiber			
		SECTION-II			
4	А	Explain the wave nature of particles and de Broglie's	L2	CO-II	[ <b>3M</b> ]
		hypothesis			

	В	Describe the Davisson and Germer's experiment and its significance in verifying the wave nature of particles OR	L2	CO-II	[7M]
5	А	Discuss Heisenberg's Uncertainty Principle	L2	CO-II	[ <b>3</b> M]
	В	Derive one dimensional time independent Schrodinger's	L5	CO-II	[ <b>7</b> M]
		wave equation			
		SECTION-III			
6	А	Compare and contrast the classical and quantum free	L6	CO-III	[5M]
		electron theories. What are the key differences in their			
		assumptions and predictions?			
	В	Explain how the band structure determines whether a	L3	CO-III	[5M]
		material is a metal, semiconductor, or insulator.			
		OR			
7	А	Derive the expression for the density of states in a three-	L5	CO-III	[5M]
		dimensional solid			
	В	Explain how the Kronig-Penney model leads to the	L6	CO-III	[5M]
		concept of allowed and forbidden energy regions in a			
		crystal			
		SECTION-IV			
8	А	Explain the difference between direct and indirect band	L5	CO-IV	[5M]
		gap semiconductors. Illustrate your explanation with			
		suitable energy band diagrams			
	В	Explain the formation of a PN junction. Draw and	L2	CO-IV	[5M]
		explain the V-I characteristics of a PN junction diode			
		under forward and reverse bias			
		OR			
9	А	Derive the expressions for electron concentration in an	L3	CO-IV	[5M]
		intrinsic semiconductor			
	В	Explain how the Fermi level in an intrinsic	L4	CO-IV	[5M]
		semiconductor depends on temperature			
4.0		SECTION-V		<b>GO T</b>	
10	А	Define electronic polarization & derive an expression for	L5	CO-V	[5M]
	D	electronic polarizability	<b>T</b> 4		
	В	What is piezo-electricity and Ferro-electricity and write	L4	CO-V	[5M]
		their properties			
11	•	UK Discuss the manufice of such hard manufic	т 4		
11	А	Discuss the properties of soft and hard magnetic	L4	CO-V	[3]VI]
	л	materials	1.2	COV	[ <b>/</b> ]]] /]]
	В	materials with examples	LZ	0.1	
		materials with examples ***			
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Code No: R22A0022

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	В	What	is the role of	a sa	alt b	ridge	e in	an	ope	eratir	ng	L	2	CO-I	[ <b>1M</b> ]
		electro	ochemical cell?			U			1		U				
	С	Why	does Cu get depo	osited	l, wh	en Ir	on re	od is	imn	nerse	ed	L.	3	CO-II	[1M]
		in CuS	So <sub>4</sub> solution.												
	D	Define	e corrosion and w	hat a	re th	e uni	ts of	corr	osio	n.		L	1	CO-II	[1M]
	Е	Name	the two repeating	g unit	s of ]	Bake	lite.					L	1	CO-III	[1M]
	F	Write	one example eac	ch fo	r a c	ondu	ictin	g po	lymo	er ar	nd	L	1	CO-III	[1M]
	~	bio-de	gradable polymer	ſ.								_		~ ~ ~ ~	
	G	Write	any two importar	it app	blicat	ions	of na	anon	nater	rials.	. 1	L	1	CO-IV	[1M]
	н	write	one example eac	cn 10	or pie	ezoei	ectri	c ma	ateria	ai ai	10	L	l	CO-IV	
	T	How a	lo vou remove ter	nnor	arv h	ardn	ess o	of wa	ter?			Ľ	2	CO-V	[ <b>1M</b> ]
	J	What	is caustic embritt	lemei	nt?	ui uii	000 0	1 110					1	CO-V	[1M]
	-		PART	Г-В (	50 N	<b>A</b> ark	s)								[]
			<u>S</u>	ЕСТ	ION	[ <b>-I</b>									
2	А	Explai	in the construct	ion	and	wor	king	Pr	incip	ole	of	L1,	L2	CO-I	[5M]
	Ð	Calor	el electrode with	neat	sket	ch.		11				-	_	60 T	
	В	Differ	entiate primary	and	sec	onda	ry (	cells	? E	xpla	ın	L	2	CO-I	[5M]
		briefly	with suitable exa	ample	es.										
•				C	DR	<b>р</b> .						-	_	60 T	
3	А	What	is Quinhydrone e	lectro	ode?	Derr	ve ar	i equ	atio:	n to		L	Z	CO-I	[5M]
			are potential of Q	uiiii) elect	roch	enterentere	al ce	ue w 11	nen	n IS					
	В	Explai	in briefly about the cid battery	he co	onstru	actio	n and	d wo	orkin	g of	a	L1,	L2	CO-I	[5M]

		<u>SECTION-II</u>			
4	А	Explain briefly about the factors promoting corrosion?	L1	CO-II	[5M]
	В	Distinguish between a galvanic corrosion and differential aeration corrosion with one example each. OR	L1,L2	CO-II	[5M]
5	А	Why gold does not tarnish whereas silver tarnishes in open atmosphere?	L3	CO-II	[5M]
	В	Differentiate Sacrificial anodic and Impressed current cathodic methods with one example each. <b>SECTION-III</b>	L2	CO-II	[5M]
6	А	Explain briefly about condensation polymerisation with suitable examples and reactions involved.	L1	CO-III	[5M]
	В	Explain briefly about the preparation and properties of Polyvinylchloride (PVC). OR	L1,L2	CO-III	[5M]
7	А	Explain briefly about addition polymerisation with suitable examples and reactions involved.	L1	CO-III	[5M]
	В	Explain briefly about Fibre reinforced plastics (FRPs) with relevant examples. SECTION-IV	L1	CO-III	[5M]
8	А	Explain briefly about Carbon nanotubes (CNTs) and their important properties.	L1	CO-IV	[5M]
	В	Explain briefly about the Sol-gel method for the preparation of nanomaterials. OR	L1	CO-IV	[5M]
9	А	Write briefly about piezoelectric materials. Give one example and one application each for piezoelectric materials.	L2	CO-IV	[5M]
	В	Write any five important applications of nanomaterials. SECTION-V	L1	CO-IV	[5M]
10	А	What are the various units of hardiness of water and derive the relationship among them	L1	CO-V	[5M]
	В	Explain briefly about the temporary and permanent hardness of water with examples. Give reasons for the above hardnesses.	L1 L2	CO-V	[5M]
11	А	Discuss about the ion exchange process of water softening and the equations involved in it.	L2	CO-V	[5M]
	В	Explain Calgon conditioning and Phosphate conditioning with appropriate chemical reactions.	L2	CO-V	[5M]

Code No: R22A0201

#### MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

### I B.Tech I Semester Supplementary Examinations, January 2025

#### **Principles of Electrical and Electronics Engineering** (CEE CEE AIMI CEE DE & D Took AIMI)

(CSE, CSE-AIVIL, CSE-DS & B. Tech-AIVIL)										
Roll No										

#### Time: 3 hours

Max. Marks: 60

Note: This question paper contains two parts A and B Part A is compulsory which carries 10 marks and Answer all questions. Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks. \*\*\* **aa** ( )

		<u>PART-A ( 10 Marks)</u>	BCLL	CO(s)	Marks
		(Write all answers of this part at one place)			
1	А	State Ohms Law.	L1	CO-I	[1M]
	В	State Thevenin Theorem.	L1	CO-I	[1M]
	С	Define RMS Value and Peak Factor.	L1	CO-II	[1M]
	D	What is the relationship between Line Voltages and Phase	L2	CO-II	[1M]
		Voltages and Also Line Currents and Phase currents in Star			
		Connection.			
	Е	Write in brief about the signifance of Back EMF.	L2	<b>CO-III</b>	[1M]
	F	What is the difference between Lap and Wave winding.	L1	<b>CO-III</b>	[1M]
	G	Draw the Layer diagram of PN junction diode, Symbol and its VI	L3	CO-IV	[1M]
		characteristics.			
	Η	What is a rectifier? Mention the different types of rectifiers?	L2	CO-IV	[1M]
	Ι	What is the difference between PNP and NPN transistor?	L4	CO-V	[1M]
	J	Draw the symbols of MOSFET and JFET.	L3	CO-V	[1M]
		PART-B (50 Marks)			
		SECTION-I			
2	А	Find the current passing through $3\Omega$ Resistor for the circuit	L3	CO-I	[5M]
		shown below in Fig(2) by using Superposition Theorem			



What are Kirchhoff's Laws? Explain Kirchhoff's Voltage Law L2 В CO-I [5M] (KVL) and Kirchhoff's Current Law (KCL) with suitable examples.

OR

A Discuss the series and parallel connections of resistive networks. L2 CO-I 3 [5M]

Page 1 of 2

		How do these connections affect the total resistance in a circuit?			
	В	Explain the mesh analysis with own example.	L3	CO-I	[ <b>5M</b> ]
		SECTION-II			
4	А	A Pure Inductive coil allows a current of 10A to flow from a	L3	CO-II	[5M]
		230V, 50HZ AC Supply. Find (a) Inductive Reactance (b)			
		Inductance of the coil (c) Power Absorbed (d) Sinusoidal			
		equations for Voltage and Current.			
	В	Derive the equations for average, RMS values of pure sinusoidal	L3	CO-II	[5M]
		wave.			
_		OR Discuss the education of three where each one inclusion	Т 1		[10] [1
5		systems.	LI	<b>CO-II</b>	LIONI
		SECTION-III			
6		Explain the construction and operation of DC generator with neat diagram	L2	CO-III	[10M]
		OR			
7	А	Derive the emf equation of a transformer.	L3	CO-III	[5M]
-	В	The shaft torque of a 10 HP DC motor is 35 Nm. Calculate the		CO-III	[5M]
		gross torque generated by the motor if the efficiency is 85%.			L J
		<u>SECTION-IV</u>			
8	А	Analyze the working of a half-wave rectifier using a P-N junction	L2	CO-IV	[5M]
		diode. Include its circuit diagram and output waveform.			
	В	Discuss the importance of the depletion region in the operation of	L2	CO-IV	[5M]
		a P-N junction diode. How does it change under forward and			
		reverse bias?			
0			10		r <b>e n</b> 41
9	А	Discuss the working of a bridge rectifier. How does it differ from	L2	<b>CO-IV</b>	[5M]
	D	a center-tapped full-wave rectifier?	12	COW	[ <b>5</b> ]/[]
	D	diode Discuss its role in electronic circuits			
		SECTION-V			
10	А	Discuss the construction, symbols, and working principles of	L2	CO-V	[5M]
_ •		NPN and PNP transistors. Highlight their differences.			[]
	В	Compare and contrast the Common Emitter, Common Base, and	L4	CO-V	[5M]
		Common Collector configurations in terms of their input/output			
		characteristics, voltage gain, and current gain.			
		OR			
11	А	Explain the Input and Output Characteristics of CB Configuration	L2	CO-V	[5M]
	В	Analyze the working of a transistor as an amplifier in the	L4	CO-V	[5M]
		Common Emitter configuration.			
		<u>ጥጥ</u> ጥ			

#### Code No: **R22A0301**

## MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

## (Autonomous Institution – UGC, Govt. of India)

#### I B.Tech I Semester Supplementary Examinations, January 2025 Computer Aided Engineering Graphics

## (CSF\_CSF\_AIML\_CSF\_DS & B Tech\_AIML)

(CSE, CSE-AIML, CSE-DS & D. Tech-AIML)										
Roll No										

#### Time: 3 hours

#### Max. Marks: 60

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 12 marks.

#### SECTION-I

1	А	Given two circles with radius 15 mm and 60 mm, having their centres 75 mm apart.	L3	CO-I	[6M]
	В	Construct a polygon of 6 sides with a side of 60 mm. OR	L3	CO-I	[6M]
2	А	Construct a regular pentagon inscribed in a circle of radius 35 mm.	L3	CO-I	[6M]
	В	Divide a 65 mm long straight line into six equal parts. SECTION-II	L3	CO-I	[6M]
3	A	Draw the projections of the following points A is 45 mm above HP and 30 mm in front of VP B is 35 mm below HP and 40 mm behind VP C is 25 mm below HP and 20 mm in front of VP	L3	CO-II	[6M]
	В	A point A is 20mm above HP and 30mm in front of VP. Another point B is 35mm below HP and 45mm behind VP. Draw the projections of these points taking the distance between the end projectors as 30mm. OR	L3	CO-II	[6M]
4	A	A line PQ, inclined at $45^{\circ}$ to the V.P., has a 60 mm long front view. The end P is 10 mm from both the principal planes while the ends Q is 45 mm above the H.P. Draw the projections of the line and determine its true length and inclinations with the principal planes.	L3	СО-Ш	[6M]
	В	A 80 mm long line PQ is inclined at an angle of $30^{\circ}$ to the H.P. The end P is 20 mm above the H.P. and on the V.P. The ends Q is 60 mm in front of the V.P. Draw the projections of the line and locate its traces. <b>SECTION-III</b>	L3	СО-Ш	[6M]
5	А	Draw the projections of a circle of 50 mm diameter, having its plane vertical and inclined at $30^{\circ}$ to the V.P. Its center is 50 mm above the H.P. and 40 mm in front of the V.P.	L3	CO-III	[6M]
	В	A pentagonal plane with a 25 mm side rests on the H.P.,	L3	CO-III	[6M]

Page 1 of 3

		on one of its corners with its surface perpendicular to the V.P. and inclined at $30^{0}$ to the H.P. Draw its projections when the side opposite to the corner on which it is resting is parallel to the H.P. OR			
6	A	A square prism has a base side of 25 mm and a height of 50 mm. It is resting on the H.P on one of its base edges. The axis of the prism is inclined at 45° to the H.P and remains perpendicular to the V.P. Draw the projections of the square prism.	L3	CO-III	[6M]
	В	A cone of 35 mm radius and a height of 100 mm. It is resting on the V.P on one of its base point. The axis of the prism is inclined at 45° to the V.P and remains perpendicular to the H.P. Draw the projections of the cone.	L3	CO-III	[6M]
7		<b>SECTION-IV</b> Draw the isometric view of cone of it's a diameter 70 mm and axis 80 mm when its base on HP OR	L3	CO-IV	[12M]
8		Draw the isometric view of cylinder of it's a diameter 70 mm and axis 80 mm when its base on HP SECTION-V	L3	CO-IV	[12M]
9		Draw the isometric view for a given orthogonal view as shown in figure. All dimensions are in mm.	L3	CO-V	[12M]



CO-V [12M]

L3

10

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#### Code No: R22A0501 MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY (Autonomous Institution – UGC, Govt. of India) I B.Tech I Semester Supplementary Examinations, January 2025 **Programming for Problem Solving** (Common to all branches) **Roll No Time: 3 hours** Max. Marks: 60 Note: This question paper contains two parts A and B Part A is compulsory which carries 10 marks and Answer all questions. Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks. BCLL PART-A (10 Marks) CO(s)Marks (Write all answers of this part at one place) What is the purpose of a flowchart? 1 А L1 CO-I [**1M**] Give an example of a logical operator in C В L2 CO-I [1M] С Define an array. L1 CO-II [**1M**] D What does the goto statement do in C? L1 CO-II [1M] What are storage classes in C? E L1 CO-III [1M] What keyword is used to declare a global variable in C? F L1 CO-III [**1M**] What is the use of the malloc() function? G L1 **CO-IV** [**1M**] What is the syntax for declaring a pointer to a function? Η L1 **CO-IV** [**1M**] What is the difference between a structure and a union? L1 CO-V Ι [**1M**] J What is the default mode of opening a file in C? L1 CO-V [1M] PART-B (50 Marks) **SECTION-I** 2 What are data types in C? Discuss their categories with А L1,L6 CO-I [5M] examples. Explain implicit and explicit type conversion in C with L2 В CO-I [5M] suitable examples. OR 3 Explain the structure of a C program with an example. L2 CO-I А [5M] Write a program in C to take two integers as input and L5 CO-I В [5M] print their sum and difference. Explain the code. **SECTION-II** Explain the working of the if and switch statements with 4 L2 CO-II А [5M] examples. Write a program to find the grade of a student based on В L5 CO-II [5M] marks using a switch statement. OR Explain how to access and modify elements in a two-5 L2 CO-II А [5M] dimensional array with examples.

Write a program to display a multiplication table for a L5 В CO-II [5M]

		given number using nested loops.			
6	А	Illustrate the use of static and extern storage classes with	L2	CO-III	[5M]
	В	Write a program to calculate the area of a circle using a function.	L5	CO-III	[5M]
		OR			
7	А	Write a program to find the largest element in an array using a function.	L5	CO-III	[5M]
	В	Explain parameter passing mechanism with example. SECTION-IV	L2	CO-III	[5M]
8	А	Discuss string manipulation functions such as strcpy(), strlen(), and strcmp() with examples.	L6	CO-IV	[5M]
	В	Write a program to reverse a string using a pointer. OR	L5	CO-IV	[5M]
9	A	What are dynamic memory management functions in C? Explain malloc(), calloc(), realloc(), and free() with examples.	L1,L2	CO-IV	[5M]
	В	Write a program to count the number of vowels in a string using pointers.	L5	CO-IV	[5M]
		SECTION-V			
10	А	Discuss the differences between structures and unions with suitable examples.	L6	CO-V	[5M]
	В	Write a program to store and retrieve employee details using an array of structures.	L5	CO-V	[5M]
		OR			
11	А	Write a program to demonstrate file operations like writing and appending data to a text file.	L5	CO-V	[5M]
	В	Explain different modes of files.	L2	CO-V	[5M]

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