Code No: R20A0401 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Analog and Digital Electronics

(EEE & ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1 Explain the qualitative theory of pn junction diode and also plot the characteristics of PN junction diode in forward and reverse bias conditions. **[14M]**

2 a. Explain Zener and Avalanche breakdown **[7M]**
b. Compare zener diode and pn junction diode and mention its applications. **[7M]**

3 Describe the input and output characteristics of a transistor in CE configuration and plot them. **[14M]**

4 a. Derive the relationship between α,β and γ. **[7M]**
b. Explain the operation of a npn transistor and also mention its current components. **[7M]**

5 Explain the principle of operation of JFET and plot its drain and transfer characteristics**.** **[14M]**

6 Explain the principle of operation of enhancement mode MOSFET and plot its drain and transfer characteristics **[14M]**

7 a. Convert the following numbers to the required base
i) $(231.3)_8$ to base 10, 2 **[4M]**
ii) $(110101)_2$ to base 8,16 **[3M]**
b. Draw the truth tables and logic diagrams of all logic gates and explain its logic through Boolean expression. **[7M]**

8 Minimize the four variable logic function using K-map f(w,x,y,z)= m(0,1,2,3,5,7,8,9,11,14,15).Implement the minimized expression using basic logic gates. **[14M]**

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Code No: **R20A0011**

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Applied Physics

(EEE & ECE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1	A.	What is Active medium?	**[2M]**
	B.	Discuss construction and working principle of Ruby laser.	**[12M]**
2	A.	Define acceptance angle and numerical aperture? Derive the expressions for numerical aperture and acceptance angle	**[10M]**
	B.	The refractive index of core and cladding are 1.54 and 1.50, then calculate fractional refractive index change and numerical aperture	**[4M]**
3	A.	Describe Davisson and Germer's experiment.	**[10M]**
	B.	Write any four properties of matter waves.	**[4M]**
4	A.	Derive an expression for Schrodinger time- independent wave equation.	**[10M]**
	B.	Determine the wavelength of electron which is accelerated by 144 volts.	**[4M]**
5		Discuss in detail about the motion of an electron in a periodic potential by using Kronig-Penny model.	**[14M]**
6	A.	Describe classification ofmaterials as metals, semiconductors and insulators.	**[6M]**
	B.	Derive the expression for effective mass of electron.	**[8M]**
7	A.	Define Hall effect and write the applications of Hall Effect?	**[5M]**
	B.	Derive the expression for density of electrons in the intrinsic semiconductor.	**[9M]**
8	A.	Discuss classification of dia, para and ferro magnetic materials on the basis of magnetic moment.	**[10M]**
	B.	Distinguish between soft and hard magnetic materials	**[4M]**

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Code No: R20A0201

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Basic Electrical Engineering

(CSE, IT, CSE-CS, CSE-AI&ML, CSE-DS & CSE-IOT, AIDS, AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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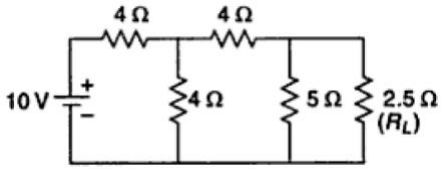
1 (a) Explain the Kirchhoff's laws considering suitable example. **[8M]**
(b) Explain briefly about dependent and independent sources. **[6M]**

2 (a) Discuss about the Passive elements in the electric circuit. **[9M]**
(b) Explain briefly about source transformation with an example. **[5M]**

3 (a) Derive the expression for star to delta transformation. **[7M]**
(b) Find the current through R_L in figure using Norton's theorem. **[7M]**



4 Explain about nodal analysis and mesh analysis with suitable examples. **[14M]**

5 Derive the RMS value , Average value, Form Factor and Peak Factor for the sinusoidal waveform. **[14M]**

6 (a)With neat phasor diagram, explain the behaviour of RL series circuit connected to AC voltage of $v=V_m \sin\omega t$ **[8M]**
(b)A series RC circuit having R=4Ω and C=120μF, is connected across 230V, 50 Hz supply, calculate (a) the capacitive reactance, (b) the impedance (c) current drawn by the circuit, and (d) the power factor of the circuit. **[6M]**

7 (a) Describe the working principle of simple loop DC generator with commutator action. **[9M]**
(b) A 6-Pole, 1500rpm, Lap wound DC generator has 72 armature conductors. The flux per pole is 0.35 Wb. Assuming linear magnetic circuit. Determine the emf induced in the DC generator. **[5M]**

8 (a) What is MCB? Explain its operation in protection of electrical equipment. **[7M]**
(b) Discuss about the types of wire and cables in electrical installations and their applications. **[7M]**

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R20

Code No: R20A0302

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Computer Aided Engineering Graphics

(CSE-AIML & CSE-CS)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1 A) Divide a 100 mm long straight line into seven equal parts. **[7M]**

B) Draw a regular pentagon of 30 mm long side using general method. **[7M]**

2 A) Draw a circle of 50 mm radius and divide it into 8 equal parts by bisection method. **[7M]**

B) Draw a regular hexagon of 30 mm long side using general method. **[7M]**

3 Draw the orthographic projections of the following points on a same reference line keeping the distance between their projectors 25 mm apart. **[14M]**

A) Point P is 30 mm above H.P. and 40 mm in front of V.P.
B) Point Q is 25 mm above H.P. and 35 mm behind V.P.
C) Point R is 32 mm below H.P. and 45 mm behind V.P.
D) Point Sis 35 mm below H.P. and 42 mm in front of V.P.
E) Point T is in H.P. and 30 mm behind V.P.
F) Point U is in V.P. and 40 mm below H.P.
G) Point V is in V.P. and 35 mm. above H.P.

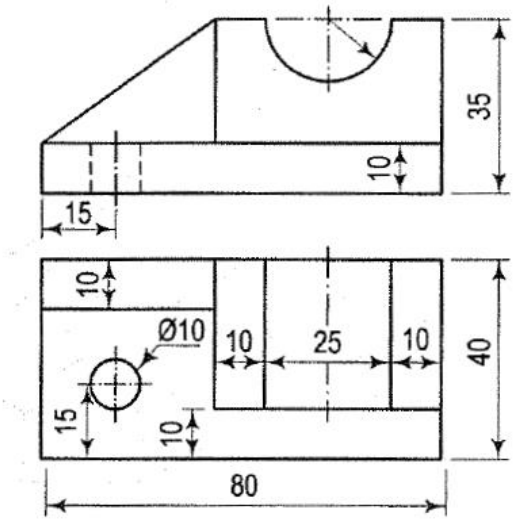
4 A line AB, 65 mm long has its end A 20 mm above H.P. and 25 mm in front of VP. The end B is 40 mm above H.P. and 65 mm in front of V.P. Draw the projections of AB and shows its inclination with H.P. **[14M]**

5 A Pentagonal plane with a 30 mm side has an edge on the H.P. The surface of the Plane is inclined at 45^0 to the H.P. and perpendicular to the V.P. Draw its Projections. **[14M]**

6 A regular Hexagonal prism, 25 mm edge of base and 55 mm height rests on an edge of its base in H.P. such that its axis is parallel to V.P. and inclined to the H.P. at 45^0. Draw the projections of solid. **[14M]**

7 Draw isometric view of a hexagonal prism with side of base 25 mm and 60 mm long axis. The prism is resting on its base on the H.P. with an edge of the base parallel to V.P. **[14M]**

8 Draw the isometric view for the following diagram. **[14M]**



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Code No: R20A0302 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Computer Aided Engineering Graphics

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
***

Q.1 **A** Divide an 80 mm long straight line into seven equal parts. **[7M]**

B Construct a hexagon of side 35 mm when one side is vertical. **[7M]**

Q.2 **A** Construct a regular pentagon with the length of the side 40mm using the general method.. **[7M]**

B Construct a regular hexagon with the length of the side 40mm using the general method. **[7M]**

Q.3 Draw the projections of the following points on a common reference line keeping the distance between their projectors 30 mm apart.

A. Point A is 30 mm below the H.P. and 40 mm in front of the V.P.
B. Point B is in the H.P. and 50 mm behind the V.P.
C. Point C is 20 mm in front of the V.P. and in the H.P.
D. Point D is 30 mm above the H.P. and 40 mm behind the V.P.
E. Point E is 15 mm below the H.P. and 30 mm behind the V.P.
F. Point F is in the both H.P and V.P.
G. Point D is 40 mm above the H.P. and 30 mm in front of the V.P.

[14M]

Q.4 A line AB 100 mm long is inclined at 30^0 to HP and 45^0 to VP. Point A is 15 mm above H.P and 20mm in front of V.P. Draw the projections of the line. **[14M]**

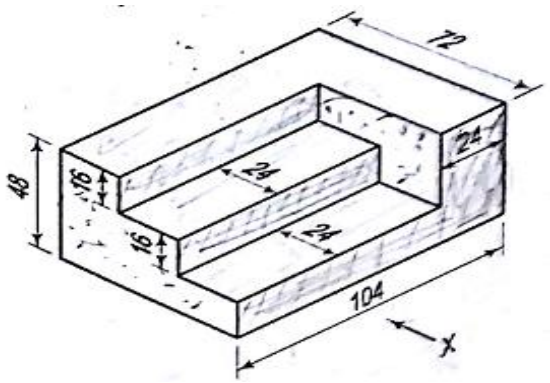
Q.5 Draw the projections of a pentagonal sheet of 26mm side, having its surface inclined at 30^0 to V.P. It's one side is parallel to VP and inclined at 45^0 to HP. **[14M]**

Q.6 A square prism of base side 40 mm and axis 60 mm is resting on its base on the ground. Draw its projections when

i) A face is perpendicular to the V.P. **[14M]**
ii) Axis is inclined at 30° to the H.P.

Q.7 Draw an isometric projection of a hexagonal prism of the base side 35 mm and axis 60 mm. The prism rests on its base on the H.P. The axis is inclined at 45^O to HP with an edge of the base parallel to the V.P. **[14M]**

Q.8 Draw the (i) Front view (ii) Top View (iii) Side view of the Following Isometric Drawing.



[14M]

Code No: R20A0302

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Computer Aided Engineering Graphics

(CSE-DS, AIDS & AIML)

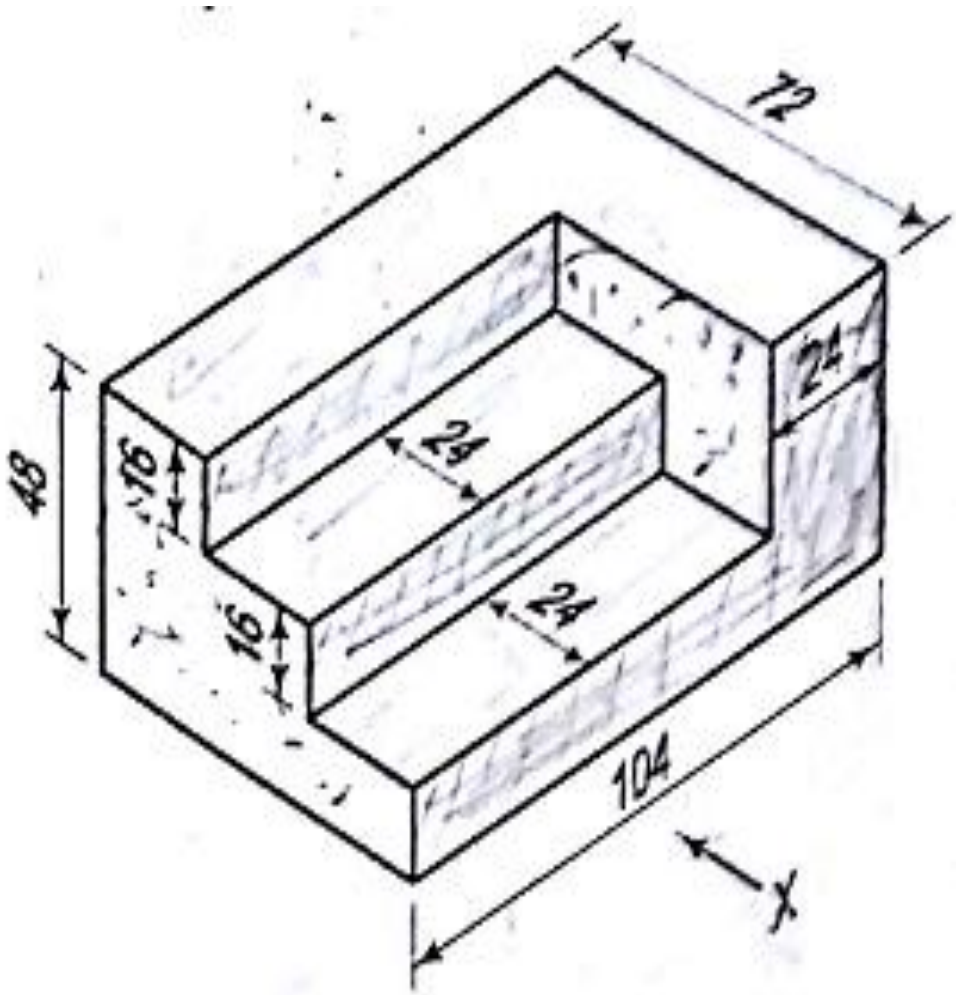
Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1	**a**	Divide a 80 mm long straight line into six equal parts.	**[7M]**
	b	Construct a regular pentagon of side 40mm.	**[7M]**
2	**a**	Draw a circle of 100 mm diameter and divide eight equal parts	**[7M]**
	b	Inscribe a regular hexagon in a circle of diameter 70 mm.	**[7M]**
3		Draw the projections of the following points on a common reference line keeping the distance between their projectors 25 mm apart. A. Point A is 40 mm above the H.P. and 20 mm in front of the V.P. B. Point B is 40 mm above the H.P and on the V.P. C. Point C is 25 mm in front of V.P and on the H.P D. Point D is 25 mm above the H.P and 30 mm behind the V.P. E. Point E is on the H.P and 30 mm behind the V.P F. Point F is 40 mm below the H.P and 30 mm behind the V.P. G. Point G is 25 mm below the H.P and 40 mm in front of V.P	**[14M]**
4		A line CD 80 mm long is inclined at an angle of 30° to H.P and 45° to V.P. the point C is 20 mm above H.P and 30 mm in front of V.P. Draw the projections of the straight line.	**[14M]**
5		Draw the projection of a pentagonal plane of side 25 mm, resting on H.P on one of its edge. The plane is inclined at 45° to the H.P and the edge on which it is resting makes an angle of 30° with the V.P.	**[14M]**
6		A pentagonal prism of side of base 30mm, axis 70mm is resting on one of its base edges in H.P. with its axis inclined at 45^0 to H.P. Draw the projections.	**[14M]**
7		Draw the isometric view of a cylinder of base 50 mm diameter and 70 mm height when it rests with its base on H.P.	**[14M]**
8		Draw the (i) Front view (ii) Top View (iii) Side view of the Following Isometric Drawings.	**[14M]**


72
24
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R20

Code No: R20A0302

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Computer Aided Engineering Graphics

(CSE-IOT & IT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1 a) Divide a 50 mm diameter circle into 12 equal segments. **[7M]**

b) Draw exterior and interior tangents connecting two circles of radii 25 mm and 40 mm having their centers 100mm apart. **[7M]**

2 a) In a circle of 70 mm diameter, inscribe (a) a regular pentagon and (b) a regular heptagon. **[7M]**

b)Draw a regular hexagon of 40 mm sides, keeping a side (a) vertical (b) horizontal **[7M]**

3 Draw the projections of the following points on a common reference line keeping the distance between their projectors 30 mm apart. **[14M]**
(a) Point A is 20 mm below the H.P. and 50 mm in front of the V.P.
(b) Point B is in the H.P. and 40 mm behind the V.P.
(c) Point C is 30 mm in front of the V.P. and in the H.P.
(d) Point D is 50 mm above the H.P. and 30 mm behind the V.P.
(e) Point E is 20 mm below the H.P. and 50 mm behind the V.P.
(f) Point F is in the V.P. and 50 mm below the H.P.

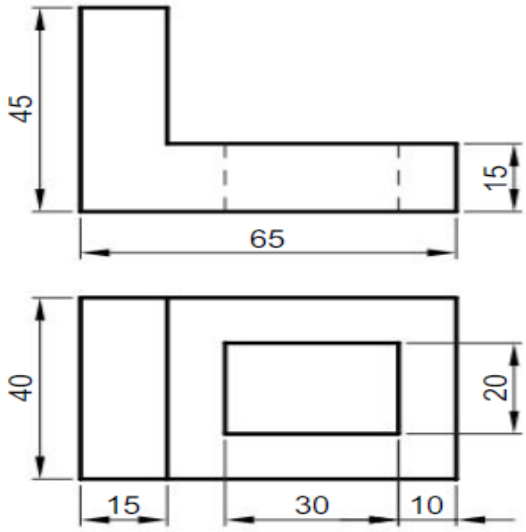
4 A 70 mm long line PQ, has its end P 20 mm above the H.P. and 30 mm in front of the V.P. The line is inclined at 45° to the H.P. and 30° to the V.P. Draw its projections. **[14M]**

5 A hexagonal plane of side 30 mm has an edge on the H.P. Its surface is inclined at 45° to the H.P. and the edge on which the plane rests is inclined at 30° to the V.P. Draw its projections. **[14M]**

6 A pentagonal prism of base edge 30 mm and axis 60 mm rests on an edge of its base in the H.P. Its axis is parallel to V.P. and inclined at 45° to the H.P. Draw its projections. **[14M]**

7 Draw the isometric view of a cylinder of base diameter 50 mm and axis 60 mm. The axis of the cylinder is perpendicular to the (a) H.P., (b) V.P. **[14M]**

8 The front and top views of an angle plate are shown in Fig. Draw its isometric view. **[14M]**



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Code No: R20A0013

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Engineering Chemistry

(ME & AE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any Five Questions
All Questions carries equal marks.

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1 a. Describe the construction, mechanism of action, advantages and applications of H_2-O_2 Fuel cell. **[10M]**

b. Explain the function of salt bridge in a electrochemical cell. **[4M]**

2 a. Explain the Electrochemical series and its significance during the construction of Galvanic cell. **[7M]**

b. Describe the construction, cell reactions during charging and discharging and applications of Lead –Acid Battery. **[7M]**

3 Describe the mechanism of electrochemical corrosion with reference to rusting of iron. **[14M]**

4 a. Delineate the process of electroplating of Cu and mention its advantages for the prevention of corrosion. **[7M]**

b. Explain the Impressed current cathodic method of protection of metal. **[7M]**

5 Illustrate the synthesis, properties and Engineering applications of following functional materials. **[7M]**

a. Poly Vinyl Chloride (PVC) **[7M]**

b. Bakelite

6 a. Outline the principle involved in the conduction of electricity through polyacetylene and mention its applications. **[7M]**

b. Compare the efficiency among Glass reinforced plastics and Carbon reinforced plastics. **[7M]**

7	a.	Differentiate magnetostrictive materials from electrostrictive materials.	**[7M]**
	b.	Explain the detailed applications of piezoelectric materials.	**[7M]**
8	a.	State Beer –Lambart's Law.	**[7M]**
	b.	Draw a neat Jablonski diagram and Explain Fluorescence and phosphorescence.	**[7M]**

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Code No: R20A0001 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

English

(Common to ALL)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.
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1. a) Have you ever made choices that are acceptable and less 'risky'? Justify your answer in the light of Robert Frost's poem "The Road Not Taken.**[7M]**
   b) The poem "The Road Not Taken", uses different symbols to convey an important message. Explain. **[7M]**

2. a) Write meaningful words using the following prefixes. **[7M]**
   i. ultra- ii. super- iii. under- iv. im- v. infra- vi. intra- vii. sub-
   b) What is a Paragraph? and explain the parts of paragraph. [**7M]**

3. a. Abraham Lincoln suggests to his son's teacher that one can also learn from nature. How? **[7M]**
   b. Complete the following sentences with suitable verb forms. **[7M]**
   1. This exercise is difficult. I_____ (help) you doing it.
   2. My Brother _____ (go) to the bank tomorrow.
   3. He usually _____ (listen) to the lecture in the class.
   4. If you prepare well, you____ (pass) the exam.
   5. My teacher ____ (scold) me when I was writing exam.
   6. Rohan _____ (meet) John when he was travelling to Delhi.
   7. Vignan _____(work) since 2019

4. a. Write synonyms for the following words. **[7M]**
   i. polite ii. foolish iii. selection iv. rude v. toxic vi. meeting vii. childish
   b. Write antonyms for the following words. **[7M]**
   i. variance ii. disdain iii. tidy iv. rude v. trained vi. mitigate vii. Sparkling

5. a. Why does Satya Nadella decide to write an email to all his emolyees? **[7M]**
   b. Change the following sentences into indirect sentence **[7M]**
   I. He said, "All people have equal rights."
   II. Roshni said, "I may meet him here".
   III. She says, "I will go to school tomorrow."
   IV. He said, "She is coming this week to discuss this."
   V. He said to them, "Will you come for dinner?"
   VI. The teacher said, "Be quiet and listen to my words."
   VII. The old man said, "Ah! I am ruined."

6. a. Write an email to the Principal for original certificates. **[7M]**
   b. Write a letter of complaint to an online shopping site expressing your dissatisfaction over the long delay in the delivery of the electronic items you have purchased. **[7M]**

7. a. Write six rules of Concord with examples. **[7M]**
   b. What are J.K. Rowling's thoughts on the power of imagination and empathy? **[7M]**

8. a. Write a detailed note on Kalam's formative influences including the details of his hometown, his family and his schooling. **[7M]**
   b. Write a memo on any topic of your choice. **[7M]**

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R20

Code No: R20A0012

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Engineering Physics

(ME & AE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1	a)	What is simple harmonic oscillator. Deduce an equation of motion for a simple harmonic oscillator.	**[10M]**
	b)	Explain the characteristics of simple harmonic motion.	**[4M]**
2		What is a damped harmonic oscillator. Derive its equation of motion and its solution. Discuss about over, critical and lightly-damped oscillators.	**[14M]**
3	a)	Differentiate between Fresnel and Fraunhofer diffraction.	**[4M]**
	b)	Explain Fraunhofer diffraction of light due to single slit and also discuss the different intensity conditions	**[10M]**
4	a)	Define Interference and explain the necessary condition to get interference.	**[6M]**
	b)	Explain the formation of Newton's rings and deduce an expression for the diameter of a bright and dark ring in reflected system.	**[8M]**
5	a)	Explain the assumptions of Classical Free electron theory. Give its merits and drawbacks.	**[4M]**
	b)	Derive an expression for density of energy states.	**10M]**
6	a)	Discuss in detail about the motion of an electron in a periodic potential by using Kronig-Penny model.	**[10M]**
	b)	Distinguish between conductors, semiconductors and insulators based on their energy band structure	**[4M]**
7	a)	Derive Clausius-Mossotti relation in solids.	**[8M]**
	b)	Explain the classification of dia, para and ferro magnetic materials on the basis of magnetic moment.	**[6M]**
8	a)	What is an optical fiber? Explain the principle of light propagation through an optical fiber.	**[6M]**
	b)	Derive an expression Numerical aperture and acceptance angle for optical fiber.	**[8M]**

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Code No: **R20A0021**

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Mathematics-I

(Common to ALL)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

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1 (a) Reduce the matrix to Echelon form and find its rank. **[7M]**

$$\begin{bmatrix} -1 & -3 & 3 & -1 \\ 1 & 1 & -1 & 0 \\ 2 & -5 & 2 & -3 \\ -1 & 1 & 0 & 1 \end{bmatrix}.$$

(b) Find weather the following equations are consistent, if so solve them. **[7M]**
$x + y + 2z = 4;\ 2x - y + 3z = 9;\ 3x - y - z = 2$

2 Determine the Eigen values and Eigen vectors of the matrix $A = \begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$. **[14M]**

3 (a) If $U = \log(x^3 + y^3 + z^3 - 3xyz)$, then prove that **[7M]**

$$\left(\frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}\right)^2 U = \frac{-9}{(x+y+z)^2}.$$

(b) If $u = \frac{yz}{x}, v = \frac{zx}{y}, w = \frac{xy}{z}$, show that $\frac{\partial(u,v,w)}{\partial(x,y,z)} = 4.$ **[7M]**

4 (a) Show that the function $u = xy + yz + zx, v = x^2 + y^2 + z^2,$ *and* $w = x + y + z$ are functionally dependent. Find the relation between them. **[7M]**

(b) Find the maxima and minimum values of $x^3 + y^3 - 3axy$. **[7M]**

5 (a) Solve $x^2 y\,dx - (x^3 + y^3)\,dy = 0.$ **[7M]**

(b) A bacterial culture, growing exponentially increases from 200 to 500 grms in the period from 6 am to 9 am. How many grams will be present at noon. **[7M]**

6 (a) Solve $2xy\,dy - (x^2 - y^2 + 1)dx = 0$. **[7M]**

(b) A body is originally at 80^{O}C and cools down to 60^{O}C in 20 minutes. If the temperature of the air is 40^{O}C, find the temperature of the body after 40 minutes. **[7M]**

7 (a) Apply method of variation of parameters to solve $\frac{d^2y}{dx^2} + y = \cos ec\, x$. **[7M]**

(b) Solve $y'' - 4y' + 3y = 4e^{3x}$. **[7M]**

8 (a) Find the Laplace transform of **[7M]**

$e^{3t} - 2e^{-2t} + \sin 2t + \cos 3t + \sinh 3t - 2\cosh 4t + 9$

(b)Find the Laplace Transform of $(i)\ \frac{\sin t}{t}$ $(ii) t\, e^{-t} \cosh t$ **[7M]**

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R20

Code No: R20A0501

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

I B.Tech I Semester Regular/Supplementary Examinations, April 2022

Programming for Problem Solving

(Common to ALL)

Roll No										

Time: 3 hours **Max. Marks: 70**

Answer Any **Five** Questions
All Questions carries equal marks.

***

1	a)	Demonstrate a general structure of C program with an example.	**[8M]**
	b)	What is a token? What are different types of tokens available in C language? Explain.	**[6M]**
2	a)	Write a program to check whether the given number is "Even" or "Odd" using conditional statement.	**[7M]**
	b)	Explain the conditional statements in C	**[7M]**
3	a)	Construct a C program using pointers to compute the sum of all elements stored in an array.	**[7M]**
	b)	Write a program to find the subtraction of two matrices.	**[7M]**
4	a)	Elucidate different Categories of user defined functions.	**[7M]**
	b)	Write a Recursive function for determining the factorial of a given number.	**[7M]**
5	a)	Classify the types of storage classes they do C supports? What is the necessity of each?	**[7M]**
	b)	Write a C program to find the GCD of two numbers using recursion.	**[7M]**
6	a)	Write a program to find sum and average of elements stored in an array, using pointers.	**[7M]**
	b)	Explain pointers to functions and array of pointers.	**[7M]**
7	a)	Develop a program to read and display information [rollno, name, fees, DOB (date of birth)] of all students in the class.	**[10M]**
	b)	How data elements are stored under unions, explain with example?	**[4M]**
8	Build a C program to implement the stack and perform push and pop operation. Also write a function to display the content of stack after each operation.		**[14M]**

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