Course Code: 23BS1T01

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE :: ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/Supplementary Examinations (BR23), December-2024

LINEAR ALGEBRA & CALCULUS (Common to All Branches)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the questions of Part-A
Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

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PART–A (10X2 = 20M)

		BL	CO	Marks
1.a)	Define Rank of a Matrix	BL1	CO 1	(2M)
b)	Find the value of k such the rank $\begin{bmatrix} 1 & 2 & 3 \\ 2 & k & 7 \\ 3 & 6 & 10 \end{bmatrix}$ is 2.	BL1	CO 1	(2M)
c)	State Cayley-Hamilton theorem.	BL1	CO 2	(2M)
d)	If $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 2 & -5 \\ 0 & 0 & 3 \end{bmatrix}$, then find the Eigen values of A^{-1}.	BL1	CO 2	(2M)
e)	State Lagrange's Mean value theorem.	BL1	CO 3	(2M)
f)	Write Maclaurin's series expansion.	BL1	CO 3	(2M)
g)	Define saddle point.	BL1	CO 4	(2M)
h)	If u = 3x+y and v = x-2y then find $\frac{\partial(u,v)}{\partial(x,y)}$	BL1	CO 4	(2M)
i)	Find $\int_0^2 \int_0^y x\, dxdy$.	BL1	CO 5	(2M)
j)	*Evaluate* $\int_{-1}^{1} \int_{0}^{z} \int_{x-z}^{x+z} (x+y+z)\, dy\, dx\, dz$	BL1	CO 5	(2M)

PART–B (5X10 = 50M)

		BL	CO	Marks
	UNIT-I			
2.	Solve the system of equations 10x+y+z =6, x+10y+z = 6, x+y+10z =6 by Gauss Seidal iterative method.	BL3	CO 1	(10M)
	(OR)			

3.(a)	Reduce the matrix to echelon form and find its rank $\begin{bmatrix} 2 & 3 & -2 & 5 & 1 \\ 3 & -1 & 2 & 0 & 4 \\ 4 & -5 & 6 & -5 & 7 \end{bmatrix}$	BL2	CO 1	(5M)
3.(b)	Show that the equations given below are consistent and hence solve them x-3y-8z = -10, 3x+y-4z =0, 2x+5y+6z =13	BL2	CO 1	(5M)
	UNIT-II			
4.(a)	Identify the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 2 & 0 & 1 \\ 0 & 2 & 0 \\ 1 & 0 & 2 \end{bmatrix}$	BL2	CO 2	(5M)
4.(b)	Show that the matrix $A = \begin{bmatrix} 1 & -2 & 2 \\ 1 & -2 & 3 \\ 0 & -1 & 2 \end{bmatrix}$ satisfies its characteristic equation.	BL2	CO 2	(5M)
	(OR)			
5.	Reduce the Quadratic form $2x^2+ 5y^2+ 3z^2+ 4xy$ to the canonical form.	BL3	CO 2	(10M)
	UNIT-III			
6.	Prove that $\frac{b-a}{1+b^2} < tan^{-1}b - tan^{-1}a < \frac{b-a}{1+a^2}$ and hence deduce i) $\frac{\pi}{4}+\frac{3}{25} < tan^{-1}\frac{4}{3} < \frac{\pi}{4}+\frac{1}{6}$ ii) $\frac{5\pi+4}{20} < tan^{-1}2 < \frac{\pi+2}{4}$.	BL3	CO 3	(10M)
	(OR)			
7.(a)	Verify Rolle's theorem for $f(x) = e^x(sinx - cosx)$ in $[\frac{\pi}{4}, \frac{5\pi}{4}]$.	BL2	CO 3	(5M)
7.(b)	Expand $\log_e x$ in powers of $(x-1)$ and hence find $\log_e 1.5$ upto 4 decimal places.	BL2	CO 3	(5M)
	UNIT-IV			
8.(a)	If $u = \log(x^3 + y^3 + z^3 - 3xyz)$ then find $\frac{\partial u}{\partial x}+\frac{\partial u}{\partial y}+\frac{\partial u}{\partial z}$	BL2	CO 4	(5M)
8.(b)	Show that the functions $u = x + y + z, v = x^2 + y^2 + z^2 - 2xy - 2yz - 2xz$ and $w = x^3 + y^3 + z^3 - 3xyz$ are functionally independent.	BL2	CO 4	(5M)
	(OR)			
9.	Locate the stationary points and examine the nature of the following function $u = x^3 + 3xy^2 - 3x^2 - 3y^2 + 4, (x > 0, y > 0)$.	BL3	CO 4	(10M)
	UNIT-V			
10.	Evaluate the following integral by changing the order of integration $\int_0^1 \int_0^{\sqrt{1-x^2}} y^2 dxdy$	BL3	CO 5	(10M)
	(OR)			
11(a)	Evaluate the triple integral $\int_0^1 \int_y^1 \int_0^{1-x} x\, dz\, dx\, dy$.	BL2	CO 5	(5M)
11(b)	Evaluate $\int_0^{\pi} \int_0^{a\,sin\,\theta} r\, drd\theta$.	BL2	CO 5	(5M)

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BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE: ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular End Examinations (BR23), December 2024

ENGINEERING PHYSICS (CE/EEE/ME/ECE)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the questions of Part-A
Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

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PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	Define diffraction grating.	1	1	(2M)
b)	Explain Polarization	2	1	(2M)
c)	Define unit Cell.	1	2	(2M)
d)	Discuss Coordination Number.	2	2	(2M)
e)	Explain Magnetization and Magnetic Susceptibility.	2	3	(2M)
f)	What is the Relation between Relative Permittivity and Electric Susceptibility.	1	3	(2M)
g)	What are drawbacks of Classical Free electron theory of solids.	1	4	(2M)
h)	Explain Heisenberg uncertainty Principal.	2	4	(2M)
i)	What are the limitations of intrinsic Semiconductor.	1	5	(2M)
j)	Discuss any two examples of Semiconducting materials.	2	5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.	Describe with the help of a neat diagram, describe the experimental arrangement to produce Newton's rings by reflected light. Prove that the diameter of dark rings is proportional to the square root of the natural numbers.	2	1	(10M)
	(OR)			
3.	Explain interference due to thin films.	2	1	(10M)
	UNIT-II			
4.	Explain simple cubic structure and body cantered cubic structure.	2	2	(10M)
	(OR)			
5.	Explain Laue method.	2	2	(10M)
	UNIT-III			
6.	Explain Electronic polarization and iconic polarization.	2	3	(10M)

	(OR)			
7.	Explain Dia, Para, Ferro, Anti Ferro and Ferri Magnetic Materials.	2	3	(
	UNIT-IV			
8.	Describe an expression for electrical conductivity of metal based on the quantum theory.	2	4	(10M)
	(OR)			
9.	Explain the behaviour of the particle in one dimensional potential box.	2	4	(10M)
	UNIT-V			
10.	What is Hall effect? Derive an expression for hall-coefficient	1	5	(10M)
	(OR)			
11.	Explain Fermi level of extrinsic semiconductor.	2	5	(10M)

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Course Code: **23BS1T03**

ONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE :: ODALAREVU
(AUTONOMOUS)

B.Tech I Semester Regular/Supplementary Examinations (BR23), December-2024

CHEMISTRY

(CSE, CSE(AI&DS), AI&ML, CSE(AI&ML) & IT)

Time: 3 hours

Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the questions of Part-A
Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	Write Schrodinger equation.	2	1	(2M)
b)	Differentiate between BMO and ABMO.	3	1	(2M)
c)	Mention two differences between CNTs and Fullerenes.	2	2	(2M)
d)	Mention any two differences between intrinsic and extrinsic semiconductors.	2	2	(2M)
e)	Write any two differences between hydrogen-oxygen fuel cell and Polymer Electrolyte Membrane Fuel cell.	3	3	(2M)
f)	Write any two differences between potentiometric titrations and conductometric titrations.	3	3	(2M)
g)	Mention any two differences between addition and condensation polymers.	2	4	(2M)
h)	Mention any two applications of biodegradable polymers.	2	4	(2M)
i)	State Beer-Lambert's law.	2	5	(2M)
j)	Mention any two applications of IR spectroscopy.	2	5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.	Describe LCAO Approximation. Demonstrate with clear illustrations and example.	3	1	(10M)
	(OR)			
3.	Illustrate the MO diagram of O_2 and π-molecular orbitals of butadiene.	2	1	(10M)
	UNIT-II			
4.(a)	What are carbon nanotubes (CNTs)? Discuss their properties.	2	2	(5M)
4.(b)	What are supercapacitors? Discuss their advantages and applications.	2	2	(5M)
	(OR)			
5.(a)	What are superconductors? Discuss their applications.	2	2	(5M)
5.(b)	Distinguish between intrinsic and extrinsic semiconductors.	3	2	(5M)
	UNIT-III			
6.	Derive Nernst's equation giving the EMF of a cell in terms of concentration of reactants and products of cell reaction.	3	3	(10M)
	(OR)			
7.	What is fuel cell? Illustrate the construction and working of Hydrogen-Oxygen Fuel cell with neat sketch and relevant chemical equations.	3	3	(10M)
	UNIT-IV			
8.(a)	Distinguish between addition polymerization and condensation polymerization.	3	4	(5M)
8.(b)	Demonstrate conduction mechanism of polyacetylene.	3	4	(5M)

	(OR)			
9.(a)	Discuss the preparation and applications of Buna-S rubber.	2	4	(5M)
9.(b)	What is biodegradable polymer? Discuss the biodegradable nature of about Polyglycolic acid (PGA).	2	4	(5M)
	UNIT-V			
10.	Demonstrate about various types of electronic transitions involved in the UV - visible region with examples.	3	5	(10M)
	(OR)			
11.	Describe the basic principle of chromatography. Demonstrate the classification of various chromatography techniques.	3	5	(10M)

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Course Code: 23ES1T02

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE: ODALAREVU
(AUTONOMOUS)

I-B.Tech. I-Semester Regular/Supplementary Examinations (BR23) December-2024

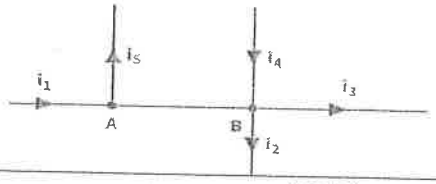
BASIC ELECTRICAL & ELECTRONICS ENGINEERING

(Common for CE, EEE, ME & ECE)

Time: 3 hours Max. Marks: 70

Note: i. Question paper consists of two Parts: viz. Part-A and Part-B, with a weightage of 35 marks each.
ii. From each part answer all short answer type questions of Qn.1 and Qn.8, Essay type Questions from 2-7 and 9-14 shall contain either-or type choice; answer any one from either/or type questions.
iii. The candidates are instructed to write answers for Part-A from page: 3 -16 and for Part-B from page: 17-32 of the answer booklet.

PARTA: BASIC ELECTRICAL ENGINEERING (MAX. MAKS: 35)

Q.No		Marks	CO	BL
1.(a)	Write the fundamental equation of AC voltage and draw the voltage wave for 200Vrms.	(1M)	CO1	1
(b)	Write an equation for voltage across capacitor.	(1M)	CO2	1
(c)	Define transformer.	(1M)	CO3	1
(d)	Define Alternator.	(1M)	CO2	1
(e)	List any two nonconventional energy sources.	(1M)	CO3	1
	UNIT-I		**CO**	**BL**
2.a)	State and Explain the KCL with example.	(5M)	CO1	1
b)	Consider the following circuit with nodes A and B. Currents i_1 and i_5 enter node A, while i4 enters node B, and i_3 and i_2 exit node B. We are given that $i_1 = 4$ A, $i_2 = 3$ A, $i_3 = 2$ A, $i_5 = 1$ A, where A represents amperes. Determine the value of i_4. 	(5M)	CO1	2
	(OR)			
3.	Draw the sinusoidal voltage wave and hence derive an expression for Average value, RMS value, Form factor and peak factor.	(10 M)	CO1	2
	UNIT-II			
4.	Explain the construction and operation of three phase induction motor with neat diagram.	(10 M)	CO2	2
	(OR)			
5.	Draw the Wheatstone bridge and derive an Expression for the unknown resistance.	(10M)	CO2	2
	UNIT-III			
6.	Explain the Solar power generating plant with neat sketch.	(10 M)	CO3	2
	(OR)			
7.	Explain Hydro power generating plant with neat sketch.	(10M)	CO3	2

End of Part-A

PARTB: BASIC ELECTRONICS ENGINEERING (MAX.MAKS: 35)

Q.No		Marks	CO	BL
8.(a)	Draw the circuit symbol for PNP transistor	(1M)	CO1	1
(b)	What are the input and output current, voltages in Common emitter configuration?	(1M)	CO1	1
(c)	Draw the circuit diagram for full wave bridge rectifier.	(1M)	CO2	1
(d)	What is the use of capacitor in rectifier?	(1M)	CO1	1
(e)	Draw the truth table for XNOR gate.	(1M)	CO3	1

	UNIT-I		CO	BL
9.a)	Explain the operation of PN junction diode and draw its VI characteristics.	(7M)	CO1	2
b)	What is Zener diode? Draw the characteristics of Zener diode?	(3M)	CO1	2
	(OR)			
10.	Draw the circuit diagram for Common emitter configuration of BJT and explain its operation with the help of input and output characteristics.	(10M)	CO1	2
	UNIT-II			
11.	Explain the full wave rectifier (bridge). Draw the respective circuit diagram and wave forms.	(10M)	CO2	2
	(OR)			
12.a)	Draw the block diagram of DC power supply and explain each component.	(7M)	CO2	2
b)	Draw the circuit diagram of RC coupled amplifier.	(3M)	CO2	2
	UNIT-III			
13.	Convert the following numbers into binary i) $(576)_{10}$ (ii) $(364)_{10}$ (iii) $(86)_{10}$ (iv) $(89)_{10}$	(10M)	CO3	2
	(OR)			
14.	Explain the half adder and full adder circuits with truth tables.	(10M)	CO3	2

End of Part-B

Course Code: 23EST101

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE: ODALAREVU
(AUTONOMOUS)

I-B.Tech. I-Semester Regular End Examinations (BR23) December-2024

BASIC CIVIL AND MECHANICAL ENGINEERING

(CSE/CSE(AI&DS)/AI&ML/CSE(AI&ML))

Time: 3 hours TOTAL Marks: 70

Note: i. Question paper consists of two Parts: viz. Part-A and Part-B, with a weightage of 35 marks each.

*ii. From each part answer all short answer type questions of **Qn.1&Qn.8**, for Essay type Questions from **2-7 & 9-14** shall contain either-or type choice; answer any one from either/or type questions.*

*iii. The candidates are instructed to write answers for **Part-A from page: 3 -16** and for **Part-B from page: 17-32** of the answer booklet.*

PARTA: BASIC CIVILENGINEERING (MAX. MAKS: 35)

Q.NO	Question	MARKS	CO	BL
1.(a)	Define Aggregate	(1M)	CO1	1
(b)	Define permeability	(1M)	CO2	1
(c)	Define a Reinforced concrete structure	(1M)	CO3	1
(d)	What is flexible pavement?	(1M)	CO2	1
(e)	What is Hydrology?	(1M)	CO3	1

	UNIT-I		CO	BL
2.	Briefly explain about prefabricated Construction Techniques	(10 M)	CO1	2
	(OR)			
3.	Enumerate the following (i) cement concrete ii)Bitumen	(10 M)	CO1	2
	UNIT-II			
4.	Explain in detail about Deep foundation	(10 M)	CO2	2
	(OR)			
5.	Explain the principle of prestressed concrete structures with a suitable example	(10 M)	CO2	2
	UNIT-III			
6.	Explain in detail about Rigid pavements with a suitable example	(10 M)	CO3	2
	(OR)			
7.	Explain with a suitable example about water storage and conveyance structures.	(10 M)	CO3	2

End of Part-A

PART B: BASIC MECHANICAL ENGINEERING (MAX. MAKS: 35)

Q.NO	Question	MARKS	CO	BL
8.(a)	List any two smart materials	(1M)	CO1	1
(b)	Principle of Boilers	(1M)	CO2	1
(c)	Working principle of Nuclear power plant	(1M)	CO3	1
(d)	Smart manufacturing	(1M)	CO2	1
(e)	Distinguish between a Joint & link	(1M)	CO3	1

	UNIT-I		CO	BL
9.	"Role of Mechanical Engineering in Industries' i)Marine sector (ii) Energy sector. Explain	(10 M)	CO1	2
	(OR)			
10.	Enumerate composites	(10 M)	CO1	2
	UNIT-II			
11.	Explain the working principle of Diesel cycle	(10 M)	CO2	2
	(OR)			
12.	Explain the working principle of Hydro-power plant.	(10 M)	CO2	2
	UNIT-III			
13	Explain the principles of (i) Forming (ii) Casting.	(10 M)	CO3	2
	(OR)			
14.	Explain in brief any two mechanical power transmission systems	(10 M)	CO3	2

End of Part-B

Course Code: 23ESIT04

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE :: ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/Supplementary Examinations (BR23), December 2024

INTRODUCTION TO PROGRAMMING
(Common to All branches of Engineering)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the questions of Part-A
Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	List the key-words in C Language.	2	1	(2M)
b)	Develop an algorithm to perform "Sum of two Numbers"	2	1	(2M)
c)	Illustrate "switch-case" with an example.	1	2	(2M)
d)	Differentiate "while" and "do-while" with suitable example.	2	2	(2M)
e)	Define a Pointer. Give an example.	1	3	(2M)
f)	Define 1-D array with syntax.	2	3	(2M)
g)	Define a function. Illustrate with an example.	1	4	(2M)
h)	What are the storage classes?	1	4	(2M)
i)	Define a structure. Give an example.	1	5	(2M)
j)	Write the purpose of fopen( ) and fclose( )	2	5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.	Discuss various sections of basic structure of C programming in detail.	2	1	(10M)
	(OR)			
3.(a)	Describe briefly about the rules to declare a variable in "C"	2	1	(5M)
3.(b)	List and explain different types of Arithmetic Operators.	2	1	(5M)
	UNIT-II			
4.(a)	Define Fibonacci sequence and write a program in C to print the same.	2	2	(5M)
4.(b)	Develop an algorithm to find the sum of individual digits of a given number.	4	2	(5M)
	(OR)			

5.	List the various control structures. Explain any four conditions with the help of syntax and example.	3	2	(10M)
	UNIT-III			
6.(a)	Discuss malloc( ) and calloc( ) in detail with suitable examples.	2	3	(5M)
6.(b)	Develop an algorithm to find sum of elements in an array.	4	3	(5M)
	(OR)			
7.	Define a 2-D array and Write a C program to perform the addition of two matrices.	3	3	(10M)
	UNIT-IV			
8.(a)	Develop a Recursive function to return the factorial of a given number.	4	4	(5M)
8.(b)	Write a brief note on Local and Global variables.	2	4	(5M)
	(OR)			
9.	Explain briefly about any four string handling functions.	3	4	(10M)
	UNIT-V			
10.	Differentiate "structure" and "union" with a suitable C program.	3	5	(10M)
	(OR)			
11(a)	Distinguish between various modes of files viz., r, r+, w, w+	3	5	(5M)
11(b)	Develop a program in C to read the content of a file and display them.	4	5	(5M)

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Course Code: **23HM1TO1**

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE: ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular End Examinations (BR23), December 2024

COMMUNICATIVE ENGLISH (CIVIL,EEE,MECH & ECE)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the questions of Part-A
Part-B consists of 5 questions with either/or choice, answer any one from either/or choice

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PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	How much money had Della managed to save for Jim's present?	BTL-1	1	(2M)
b)	"Men may come and men may go, But I go on forever"- Explain.	BTL-2	1	(2M)
c)	How does the brook claim it is different from human beings?	BTL-1	2	(2M)
d)	Define LSRW skills.	BTL-2	2	(2M)
e)	Who is Elon Musk?	BTL-1	3	(2M)
f)	What is Note-making?	BTL-1	3	(2M)
g)	Write a paragraph on Honesty is the best policy?	BTL-3	4	(2M)
h)	Define Role-Play.	BTL-2	4	(2M)
i)	What is intrapersonal communication?	BTL-1	5	(2M)
j)	Write few examples of Technical jargons?	BTL-1	5	(2M)

PART–B (5X10 = 50M)

	UNIT-I			
2.	What was Jim's reaction when he returned home? Explain in detail.	BTL-1	1	(10M)
	(OR)			
3.	Define the following words with few examples each. a) Synonyms b) Antonyms c) Affixes d) Prefixes e) Suffixes	BTL-2	1	(10M)
	UNIT-II			
4.	How is the journey of the brook similar to the journey of life and yet different? Why?	BTL-1	2	(10M)
	(OR)			
5.	Define the terms Homonyms, Homographs and Homophones with suitable examples?	BTL-2	2	(10M)

	UNIT-III			
6.	What are some interesting facts about Elon Musk? Explain in detail?	BTL-3	3	(10M
	(OR)			
7.	What are the strategies for reading comprehension?	BTL-1	3	(10M)
	UNIT-IV			
8.	What is the theme of The Toys of Peace by Saki? Explain the influence of external factors on children's behaviour and attitude in the story?	BTL-3	4	(10M)
	(OR)			
9.	You had purchased a mobile phone from an e- commerce website during a discount sale. However you received a damaged phone (the screen was broken and the battery appeared to have been removed from the box). Write a letter to the e- commerce website asking for a replacement or refund.	BTL-4	4	(10M)
	UNIT-V			
10.	How can intrapersonal skills improve you as a person? Explain in detail manner?	BTL-4	5	(10M)
	(OR)			
11.	Define essay and write an essay on "The impact of Technology on young minds".	BTL-3	5	(10M)

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Final Copy

8/12/20

(Dr-A-Nageswara Rao)

Course Code: 23ESIT03

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular End Examinations (BR23), December-2024

ENGINEERING GRAPHICS (CSE)

Duration:3 hours (F/N) Max. Marks:70

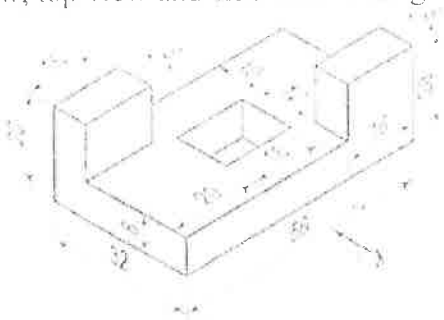
Paper consists of five questions, Each question has internal choice, and either of them can be answered

All Questions carry Equal Marks

		BTL	CO	Marks
	UNIT-I			
1 a)	Draw the parabola (e=1), with the distance of the focus from the directrix as 50 mm, and draw the tangent and normal at any point on the curve.	3	CO1	(14M)
	(OR)			
1 c)	Draw the Involute of a circle of radius 20 mm. Draw a normal and tangent to a curve at any point on the curve.	3	CO1	(14M)
	UNIT-II			
2 a)	A line AB line 100 mm length is inclined at a angel of 35^0 to HP and 50^0 to VP. The point A is 15 mm above HP and 20 mm in-front of VP. Draw the projections of line.	3	CO2	(14M)
	(OR)			
2 c)	A hexagonal plane of side 30 mm is parallel to HP and 30^0 incline to HP and 45^0 inclined to VP. One of its side parallel and 15 mm above HP and one of its corner 10 mm in-front of VP. Draw its projections.	3	CO2	(14M)
	UNIT-III			
3 a)	A hexagon prism, with side 25 mm and axis 50 mm long, is resisting on HP. Draw the projections of the Prism, when its axis is making 30^0 with HP and parallel to VP.	3	CO3	(14M)
	(OR)			
3 c)	Pentagonal pyramid, with the side of base 25 mm and axis 60 mm long, resisting on HP. Draw the projections of the prism, when the axis is inclined at 45^0 to HP and parallel to VP.	3	CO3	(14M)
	UNIT-IV			
4 a)	A Hexagonal pyramid of base side 25 mm and height 60 mm, is resisting on the HP. It is cut by an axis 30 mm above the base and parallel to H.P. Draw front view, sectional top view.	3	CO4	(14M)
	(OR)			
4 c)	A Pentagonal Prism with side of base 25 mm and height 60 mm, it is on HP and one of its side is parallel to VP. The cutting plane inclined at 45^0 to the axis of the prism and passing through the midpoint of the axis. Develop the lateral surface of the prism.	3	CO4	(14M)

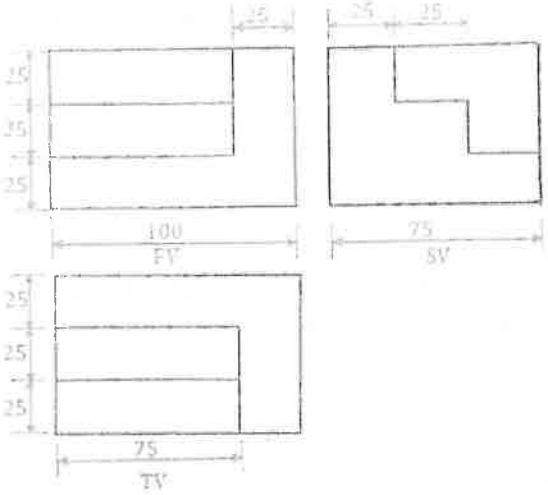
UNIT-V

5 a) Draw the Front view, top view and side view from given isometric view. 3 CO5 (14M)



(OR)

5 c) Draw the Isometric view from given orthographic view. 3 CO5 (14M)



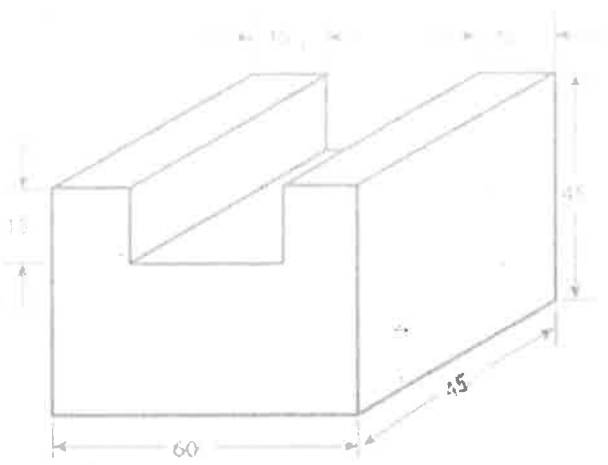
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BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)
I B.Tech I Semester Regular/ Supplementary End Examinations (BR23), December-2024
ENGINEERING GRAPHICS (A.N) (Common to CSE & Allied Branches)

Duration: 3 hours | Max. Marks: 70

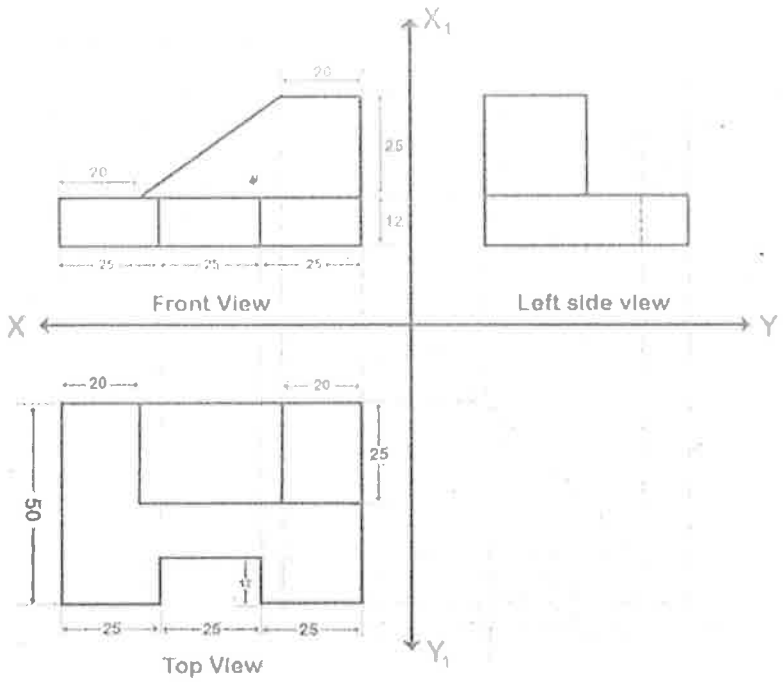
Paper consists of five questions, Each question has internal choice, and either of them can be answered
All Questions carry Equal Marks

	UNIT-I	BTL	CO	Marks
1 a)	Draw the hyperbola (e<1 or 3/2), with the distance of the focus from the directrix as 50 mm, and draw the tangent and normal at any point?	CO1	CO1	(14M)
	(OR)			
1 c)	Draw the Involute of regular pentagon of side 30 mm. Draw a normal and tangent to a curve at any point?	CO1	CO1	(14M)
	UNIT-II			
2 a)	A line AB line 70 mm length is inclined at a angel of 30^0 to HP and 45^0 to VP. The point A is 15 mm above HP and 20 mm in-front of VP. Draw the projections of line.	CO2	CO2	(14M)
	(OR)			
2 c)	A pentagonal plane of side 30 mm is parallel to VP and 30^0 incline to VP and 45^0 inclined to HP. One of its side parallel and 15 mm above HP and one of its corner 10 mm in-front of VP. Draw its projections	CO2	CO2	(14M)
	UNIT-III			
3 a)	A Pentagonal prism, with side 25 mm and axis 50 mm long, is resisting on HP. Draw the projections of the Prism, when its axis is making 30^0 with HP and parallel to VP?	CO3	CO3	(14M)
	(OR)			
3 c)	Hexagonal pyramid, with the side of base 25 mm and axis 60 mm long, resisting on VP. Draw the projections of the prism, when the axis is inclined at 45^0 to VP and 35^0 to HP.	CO4	CO3	(14M)
	UNIT-IV			
4 a)	A Pentagonal pyramid of base side 25 mm and height 60 mm, is resisting on the HP. It is cut by an axis 30 mm above the base. Draw front view, sectional top view and true shape of the section?	CO4	CO4	(14M)
	(OR)			
4 c)	A Hexagonal Prism with side of base 25 mm and height 60 mm, it is on HP and one of its side is parallel to VP. The cutting plane inclined at 45^0 to the axis of the prism and passing through the midpoint of the axis. Develop the lateral surface of the prism.	CO4	CO4	(14M)
	UNIT-V			
5 a)	Draw the Front view, top view and side view from given isometric view	CO4	CO5	(14M)



(OR)

5 c)	Draw the Isometric view from given orthographic view?	CO4	CO5	(14M)



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BR23 9/01/25

Course Code: 23ES1T03

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/ Supplementary Examinations (BR23), December-2024

ENGINEERING GRAPHICS

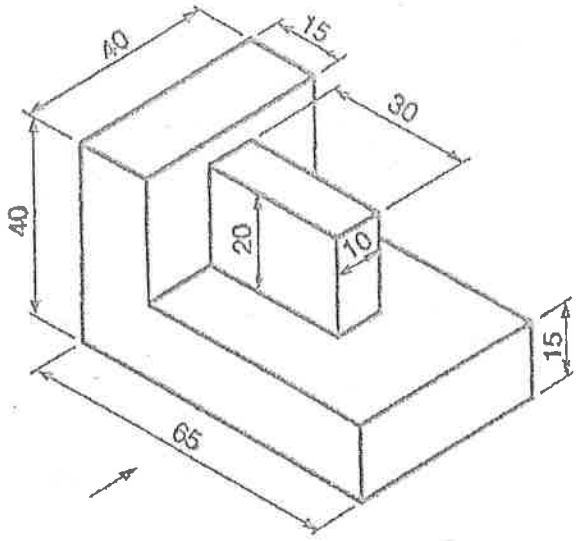
(Common to CSE, CSE(AI&DS), AI&ML & CSE(AI&ML))

Duration: 3 hours | Max. Marks: 70

Paper consists of five questions, each question has internal choice, and either of them can be answered

All Questions carry Equal Marks

	UNIT-I	BTL	CO	Marks
1.a)	A 3.2 cm long line represents a length of 4 meters. Extend this line to measure lengths up to 25 meters and show on it units of meter and 5 meters. Show the length of 17 meters on this line.	1	CO1	(7M)
b)	Construct a cycloid of a circle of diameter 50 mm for one revolution. Also, draw a tangent and a normal to the curve at a point 35 mm above the base line.	3	CO1	(7M)
	(OR)			
1. c)	Construct a hyperbola, with the distance between the focus and the directrix as 50 mm and eccentricity as 3/2. Also, draw a normal and tangent to the curve at a point 30 mm from the directrix.	3	CO1	(10M)
d)	Construct a regular pentagon of side 30 mm.	3	CO1	(4M)
	UNIT-II			
2. a)	A pentagonal plane with a 30 mm side rests on H.P. on an edge such that the surface is inclined at 45 degrees to the H.P. and the edge on which its rest is inclined at 30 degrees to the VP. Draw its projections.	2	CO2	(14M)
	(OR)			
2. c)	Two pegs fixed on a wall are 4.5 meters apart. The distance between the pegs measured parallel to the floor is 3.6 meters. If one peg is 1.5 meters above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor.	1	CO2	(7M)
d)	The top view of a line measures 60 mm. The line is parallel to the VP and inclined 45° to the HP. One end of the line is 25mm in front of the VP and lies on the HP. Draw its projections and determine the true length.	4	CO2	(7M)
	UNIT-III			
3.a)	A square prism, base 40 mm side and height 65 mm, has its axis inclined at 45^{0} to the HP and has an edge of its base, on the H.P and inclined at 30^{0} to the VP. Draw its projections.	1	CO3	(14M)
	(OR)			
3. c)	A hexagonal pyramid of base side 25 mm and axis 60 mm is freely suspended from one of the corners of the base. Draw its projections when its axis is perpendicular to the VP.	1	CO3	(7M)
d)	A pentagonal prism of base edge 30 mm and axis 60 mm rests on an edge of its base in the HP. Its axis is parallel to VP and inclined at 45° to the HP. Draw its projections.	3	CO3	(7M)
	UNIT-IV			
4. a)	A cone, base 75 mm diameter and axis 80 mm long is resting on its base on the HP. It is cut by a section plane perpendicular to the VP, inclined at 45° to the HP. and cutting axis at a point 35 mm from the apex. Draw it front view, sectional top view, sectional side view and true shape of the section.	4	CO4	(14M)

	(OR)			
4. c)	A cylinder of base 50 mm diameter and axis 60 mm long is resting on its base on HP. It is cut by section plane perpendicular to VP and Inclined at 45° to HP and cuts all the generators from extreme left generator. Develop the lateral surface of the truncated cylinder.	3	CO4	(14M)
	UNIT-V			
5. a)	Draw the following views for the object shown in figure. All dimensions are in mm. i) Front view ii) Top view iii) Left Side view 	2	CO5	(14M)
	(OR)			
5. c)	A sphere with a 50 mm diameter rests centrally over a cube with a 60 mm side. Draw its isometric view.	2	CO5	(14M)

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