Course Code: **23BS1T02**

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/Supplementary Examinations JAN-2026 (BR23)

ENGINEERING PHYSICS (CE, EEE, ME & ECE)

Time: 3 hours Max. Marks: 70

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

PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	State the necessary conditions to obtain interference of light.	1	CO1	(2M)
b)	Distinguish between interference and diffraction.	1	CO1	(2M)
c)	Discuss the significance of a unit cell in crystallography.	2	CO2	(2M)
d)	What is Bragg's law of X-Ray diffraction?	1	CO2	(2M)
e)	Write the applications of Magnetic materials.	1	CO3	(2M)
f)	Explain dielectric losses.	2	CO3	(2M)
g)	Calculate the wavelength associated with an electron raised to a potential of 2000V.	3	CO4	(2M)
h)	Mention the merits of quantum free electron theory.	1	CO4	(2M)
i)	Define extrinsic semiconductors.	1	CO5	(2M)
j)	The R_H of a specimen is 3.66×10^{-4} m^3/c. Its resistivity is $8.93 \times 10^{-3} \Omega$-m. find number of electrons (n).	3	CO5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.(a)	Explain how Newton's rings are formed in the reflected light. Derive an expression for a diameter of bright ring.	2	CO1	(7M)
2.(b)	Calculate the radius of curvature of a lens used in Newton's rings experiment if the diameter of the 10^{th} dark ring is 0.5 cm and light of wavelength 5900 A°.	3	CO1	(3M)
	(OR)			
3.(a)	Derive resultant intensity distribution in Fraunhofer diffraction due to a double slit.	3	CO1	(10M)
	UNIT-II			
4.(a)	Derive atomic packing factor of body centred cubic (BCC) structure	3	CO2	(7M)
4.(b)	Draw the (100) & (110) planes in cubic crystals	3	CO2	(3M)
	(OR)			
5.(a)	Describe, in detail, powder method or Debye-Scherrer method for the determination of crystal parameter.	2	CO2	(10M)
	UNIT-III			
6.(a)	Write the Classification of dia, para and ferromagnetic materials?	1	CO3	(7M)
6.(b)	Define Bohr magneton. Find its value.	3	CO3	(3M)
	(OR)			
7.(a)	Explain Clausius-Mossotti relation in dielectrics subject to static fields?	2	CO3	(6M)

7.(b)	Calculate the dielectric constant of the dielectric material with density 3×10^{28} atoms/m^3 shows electric polarizability of 10^{-40} farad m^2. Assuming the internal electric field to be Lorentz field.	3	CO3	(4M)
	UNIT-IV			
8.(a)	Determine Eigen values and functions for a particle in one dimensional infinite potential box.	3	CO4	(10M)
	(OR)			
9.(a)	Derive electrical conductivity by using Classical free electron theory.	3	CO4	(10M)
	UNIT-V			
10.a)	Derive an expression for Hall co-efficient and write any two applications of Hall effect.	3	CO5	(10M)
	(OR)			
11.a)	Derive an expression for electron charge carrier density in intrinsic semiconductors.	3	CO5	(7M)
11.b)	Explain the position of fermi energy level in intrinsic semiconductors.	2	CO5	(3M)

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BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE :: ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/Supplementary Examinations Jan-2026 (BR23)

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

Time: 3 hours Max. Marks: 70

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

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PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	Write the electronic configuration of O_2 molecule as per MOT.	1	1	(2M)
b)	What are the boundary conditions for a particle in one dimensional box.	1	1	(2M)
c)	Describe the bandgap of semiconductors.	1	2	(2M)
d)	Outline about the nanomaterials used in different sectors.	3	2	(2M)
e)	Write the Nernst equation and its significance.	1	3	(2M)
f)	Differentiate between primary and secondary cells.	2	3	(2M)
g)	Write the significance of conducting polymers.	3	4	(2M)
h)	Sketch the structures of Buna-N and Buna-S.	2	4	(2M)
i)	Write the different electronic transitions in UV-Visible spectroscopy.	3	5	(2M)
j)	Give any two applications of HPLC.	3	5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.(a)	Derive the expression of Schrodinger wave equation and write the significance of ψ and ψ^2.	1	1	(5M)
2.(b)	Calculate bond order and electronic configuration of Nitrogen molecule with the help of MO energy level diagram.	3	1	(5M)
	(OR)			
3.(a)	Describe the characteristics of the potential energy in a one-dimensional box and its significance in quantum mechanics.	1	1	(5M)
3.(b)	Sketch the Π-Molecular energy level diagram of Benzene.	3	1	(5M)
	UNIT-II			
4.(a)	Describe about Graphene and give its detailed properties.	1	2	(5M)
4.(b)	What is intrinsic semiconductor and explain the formation of extrinsic semiconductors through doping.	1	2	(5M)
	(OR)			
5.(a)	Differentiate between single-walled and multi-walled carbon nanotubes.	3	2	(5M)
5.(b)	Explain the concept of hole and electron mobility in semiconductors.	1	2	(5M)

UNIT-III

6.(a)	Classify fuel cells and explain about how to construct H_2-O_2 fuel cells and write the applications.	2	3	(5M)
6.(b)	What is the Electrode potential of a half cell for Zinc electrode dipping in a 0.01M Zinc solution? (The standard electrode potential of cell is E^0= 0.763V).	1	3	(5M)

(OR)

7.(a)	Discuss brief about the Potentiometric sensor and its significance.	2	3	(5M)
7.(b)	Sketch the neat diagram of Zinc-Air battery and discuss about working, cell reactions and applications.	3	3	(5M)

UNIT-IV

8.(a)	Give an account on the preparation, properties and application of polylactic acid.	3	4	(5M)
8.(b)	Mention few natural and synthetic polymers and write applications of PVC.	3	4	(5M)

(OR)

9.(a)	Differentiate between thermoplastics and thermosetting plastics.	3	4	(5M)
9.(b)	Explain free radical mechanism of addition polymerization.	2	4	(5M)

UNIT-V

10.(a)	State and derive the Beer-lambert's law and its significance.	2	5	(5M)
10.(b)	Describe principle and working of HPLC and its analytical applications.	2	5	(5M)

(OR)

11.(a)	Give detailed account on UV-Visible spectroscopy instrumentation and current trends in pharma sector.	3	5	(5M)
11.(b)	Illustrate about the following i)Detectors used in HPLC ii) Radiation sources in FT-IR.	3	5	(5M)

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(5) (BR23/BR20) 09/01/2026

Course Code: 23ES1T02

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)
I-B. Tech I-Semester Regular End Examinations (BR23), JAN-2026
Basic Electrical and Electronics Engineering
(Common to CE, ME, EEE&ECE)

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

1. The question paper consists of two parts, viz., Part A and Part B, with an equal weight of 35 marks each.
2. The student is instructed to write Part A from pages 1 to 16, and Part B from pages 17 to 32.
3. Answer all five questions in Section A of Part A and Part B. Each question carries one mark.
*4. Answer three questions from Section B with the **'EITHER' 'OR'** choice one from each unit. Each question carries 10 Marks.*

PART –A (BASIC ELECTRICAL ENGINEERING)

SECTION –A 5 X 1 = 5

1.a)	State KCL	BL1	CO1	[1M]
1.b)	Define frequency?	BL1	CO1	[1M]
1.c)	What is an Inductor motor and on what principle it works?	BL1	CO2	[1M]
1.d)	What is a Measuring instrument	BL1	CO2	[1M]
1.e)	What are the different types of Energy Resources?	BL1	CO3	[1M]

SECTION –B 3 X 10 = 30

UNIT-I

2.a)	State and Explain KVL & KCL with examples.	BL2	CO1	[10M]
	(OR)			
3.a)	State and Explain superposition theorem with an example.	BL3	CO1	[10M]

UNIT-II

4.a)	Explain the construction principle and operation of an alternator?	BL2	CO2	[7M]
4.b)	Explain about the Wheatstone bridge?	BL2	CO2	[3M]
	(OR)			
5.a)	What is a transformer? Explain the operation and working of an single phase transformer?	BL2	CO2	[10M]

UNIT-III

6.a)	With a neat diagram explain the power generation using Hydro power plant.	BL2	CO3	[10M]
	(OR)			
7.a)	What is two-part tariff? State its advantages and disadvantages?	BL2	CO3	[6M]
7.b)	Explain with an example how unit wise calculation is done for domestic consumers	BL2	CO3	[4M]

PART –B (BASIC ELECTRONICS ENGINEERING)

SECTION –A

5 X 1 = 5

8.a)	What is a P-type semi conductor?	BL1	CO4	[1M]
.b)	Draw the diagram of a CC configuration?	BL1	CO4	[1M]
.c)	State the different types of rectifiers?	BL1	CO5	[1M]
.d)	Draw the Logic Symbol of End Gate.	BL1	CO6	[1M]
.e)	What are universal gates?	BL1	CO6	[1M]

SECTION –B

3 X 10 = 30

	UNIT-IV			
9 .a)	What is a BJT and explain CE configuration with its characteristics	BL2	CO4	[10M]
	(OR)			
10.a)	What is a diode? Define P-Type semiconductor and N-Type semiconductor? and draw and explain the characteristics.	BL2	CO4	[4M]
b)	Explain about CC configuration and draw the characteristics	BL2	CO4	[6M]
	UNIT-V			
11.a)	Explain the working principle of a full wave bridge rectifier with a neat diagram?	BL3	CO5	[5M]
b)	Draw and explain the block diagram of an electronic instrumentation system?	BL2	CO5	[5M]
	(OR)			
12.a)	What is an amplifier? Explain in detail about RC coupled amplifier.	BL2	CO5	[10M]
	UNIT-VI			
13.a)	What are logic gates? Explain about different logic gates giving their graphic symbols and truth tables.	BL2	CO6	[10M]
	(OR)			
14.a)	State the laws of Boolean algebra.	BL2	CO6	[5M]
b)	Write a short note on i) Half adder. ii) Full adder.	BL2	CO6	[5M]

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Course Code: **23ES1T01**

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE: ODALAREVU
(AUTONOMOUS)

I-B.Tech I-Semester Regular/Supplementary Examinations (BR23) Jan-2026

BASIC CIVIL & MECHANICAL ENGINEERING

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

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 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 CIVIL ENGINEERING (MAX. MAKS:35)

Q.NO		MARKS	CO	BL
1.(a)	What are the different types of building materials.	(1M)	CO1	L1
(b)	What factors affect the permeability of soil?	(1M)	CO2	L2
(c)	Define hydrology.	(1M)	CO3	L1
(d)	How do you categorize the Bricks available in India?	(1M)	CO1	L1
(e)	What is the purpose of an arch in construction?	(1M)	CO3	L2

	UNIT-I		CO	BL
2.	Define civil engineering and explain the role of civil engineers in society.	(10 M)	CO1	L2
	(OR)			
3.	Explain the manufacturing process of bricks.	(10 M)	CO1	L2
	UNIT-II			
4.	Discuss the different types of structures used in civil engineering and the factors that influence the choice of a specific type.	(10 M)	CO2	L2
	(OR)			
5.	What are framed structures? Explain how they are designed to resist different types of loads.	(10 M)	CO2	L2
	UNIT-III			
6.	Describe the importance of Transportation in Nation's economic development?	(10 M)	CO3	L3
	(OR)			
7.	Explain the differences between rigid pavement & flexible pavement.	(10 M)	CO3	L3

***End of Part-A**

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

Q.NO		MARKS	CO	BL
8.(a)	What are the sectors of mechanical engineering.	(1M)	CO1	L1
(b)	List out the thermodynamic processes involved in the Diesel cycle.	(1M)	CO2	L1
(c)	List out any two robotic applications.	(1M)	CO3	L1
(d)	Define ceramic materials.	(1M)	CO1	L1
(e)	What is the difference between a two stroke Engine and a four-stroke engine?	(1M)	CO2	L2

	UNIT-I		CO	BL
9.	Discuss the role of mechanical engineering in the Aerospace and marine sectors.	(10M)	CO1	L3
	(OR)			
10.	Explain and Classify composite material and steels.	(10M)	CO1	L2
	UNIT-II			
11.	Briefly explain the principle and working of a Nuclear Power Plant with a neat sketch	(10M)	CO2	L2
	(OR)			
12.	Explain the working of the 4-stroke CI engine.	(10M)	CO2	L2
	UNIT-III			
13.	What are the different types of mechanical power drives. Explain any two drives with diagram.	(10M)	CO3	L3
	(OR)			
14.	Explain various types of joints in robotics.	(10M)	CO3	L2

***End of Part-B**

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

I B.Tech I Semester Regular/Supplementary Examinations (BR23) JAN-2026

INTRODUCTION TO PROGRAMMING (Common to All Branches)

Time: 3 hours Max. Marks: 70

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

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PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a	Differentiate between algorithm and program.	BL1	CO1	(2M)
b)	Write the primitive data types in C?	BL2	CO1	(2M)
c)	Write the syntax of while -loop?	BL1	CO2	(2M)
d)	Write the syntax of a else if ladder?	BL1	CO2	(2M)
e)	What is two dimensional array?	BL1	CO3	(2M)
f)	Define null Pointer?	BL1	CO3	(2M)
g)	What is a string?	BL2	CO4	(2M)
h)	What are the categories of functions?	BL1	CO4	(2M)
i)	Difference between structure and union.	BL2	CO5	(2M)
j)	What is a file?	BL2	CO5	(2M)

PART–B (5X10 = 50M)

		BTL	CO	Marks
	UNIT-I			
2.	Explain flow chart and benefits of using the flow chart in programming. Draw a flow chart to find the sum and average of n integers.	BL2	CO1	(10M)
	(OR)			
3.	What are the types of operators? Explain any three.	BL3	CO1	(10M)
	UNIT-II			
4.	Explain different type of unconditional statements used in c programming with example.	BL2	CO2	(10M)
	(OR)			
5.	What are the different conditional statements in C programming? Explain with proper example of each.	BL3	CO2	(10M)
	UNIT-III			
6.	Explain Types of arrays with example program?	BL3	CO3	(10M)
	(OR)			
7.	Define dynamic memory allocation. Differentiate between malloc () and calloc () with proper example.	BL3	CO3	(10M)
	UNIT-IV			
8.	Differentiate between call by value and call by reference with proper example.	BL3	CO4	(10M)
	(OR)			
9.	Discuss the following string functions in C with suitable code snippet: i) strrev() ii) strcmp() iii) strcat() iv) strlen() v) strcpy()	BL3	CO4	(10M)
	UNIT-V			
10.	Explain the process of using fopen() function in C with suitable examples. Also discuss various modes of opening a file in C.	BL2	CO5	(10M)
	(OR)			
11.	Explain about structure and nested structure with an example program.	BL2	CO5	(10M)

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Course Code: **23HM1T01**

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)
I-B.Tech I-Semester Regular End Examinations (BR23), JAN-2026
Communicative English (CE, EEE, MECH&ECE)

Time: 3 hours | Max. Marks: 70

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

PART–A (10X2 = 20M)

		BTL	CO	Marks
1.a)	Why did Harvey think elementary education needed to be rethought?	BTL1	CO5	(2M)
b)	What is the mood of the poem "The Brook"	BTL1	CO2	(2M)
c)	Briefly describe two of Musk's early business ventures.	BTL2	CO3	(2M)
d)	Define Homophones with examples.	BTL1	CO1	(2M)
e)	Rahul went to the university to study M.Tech. Rewrite the sentence correctly.	BTL3	CO3	(2M)
f)	Give Examples of Subject -Verb agreement.	BTL2	CO3	(2M)
g)	Name the parts of a formal letter.	BTL2	CO4	(2M)
h)	How Intrapersonal Communication effects on decision making?	BTL1	CO5	(2M)
i)	What are the three steps involved in Note making?	BTL2	CO3	(2M)
j)	Define suffixes with examples	BTL1	CO3	(2M)

PART–B (5X10 = 50M)

UNIT-I

2.(a)	How do Jim's and Della's actions symbolize the strength of their love for each other?	BTL1	CO1	(5M)
2.(b)	Define Prefixes. Write examples for inter, non, pre, semi, and tri prefixes.	BTL1	CO2	(5M)
	(OR)			
3.(a)	Show how the twist in the tale makes the story of Jim and Della a moral lesson.	BTL2	CO1	(5M)
3.(b)	Write **Synonyms** for the following i) Ecstatic ii) Coot iii) Enhance iv) Primitive v) Crucial	BTL1	CO2	(5M)

UNIT-II

4.(a)	The Brook offers a visual treat of sight and sound. Explain.	BTL5	CO2	(5M)
4.(b)	Write a **paragraph** on a Smartphone.	BTL3	CO2	(5M)
	(OR)			
5.(a)	Discuss the effectiveness of the first-person narration used by Lord Tennyson in the poem **The Brook**.	BTL6	CO2	(5M)
5.(b)	Frame five Wh questions.	BTL3	CO2	(5M)

UNIT-III

6.(a)	What are Elon Musk's contributions to the field of Science and Technology?	BTL1	CO3	(5M)
6.(b)	**Fill in the blanks with the correct verb forms.** i) Sita never-----(tell) lies. ii) Ravi really ---- (hate) dishonest people. iii) Suman ---- (live) in Mumbai for 10 years. iv) My sister is a writer. She-------(write) novels. v) How have you been----? (do)	BTL3	CO3	(5M)
	(OR)			
7.(a)	What are the key decisions Elon Musk made to get where he is today?	BTL1	CO3	(5M)

7.(b) **Paraphrase the following passage.** BTL3 CO3 (5M)

John could not find the butter in his fridge. He went to buy some from the store. On coming back, he saw his cat sitting on the floor, smacking its lips. There was some yellow stuff smeared all around its face. Thus, John solved the mystery of the missing butter.

UNIT-IV

8.(a)	Describe how the children found an exciting way to play with their new non-violent toys.	BTL2	CO4	(5M)
8.(b)	Write a letter to your friend on regulating violent video games and suggest your ideas to control.	BTL2	CO4	(5M)
	(OR)			
9.(a)	Do you think Harvey and Elizabeth's experiment failed? Justify your answer.	BTL3	CO4	(5M)
9.(b)	Write a letter to the head librarian of the District Library in your town asking for details regarding new membership. Also ask about timings and rules and regulations of the library.	BTL2	CO4	(5M)

UNIT-V

10.a)	What are the different ways in which intrapersonal communication helps improve everyday life?	BTL1	CO5	(5M)
10.b)	Write an essay on Time and Tide wait for none.	BTL6	CO5	(5M)
	(OR)			
11.a)	What impact does Intrapersonal communication have on your personal growth?	BTL2	CO5	(5M)
11.b)	**Reading Comprehension**	BTL4	CO5	(5M)

Reading is a fundamental skill that plays a vital role in our lives. It's not just about deciphering words on a page but about the doors it opens, the knowledge it imparts, and the world it allows us to explore. Reading is an essential tool for learning, expanding our horizons, and fostering imagination. When we read, we acquire knowledge. Whether it's reading textbooks, news papers, or online articles. We gain information that helps us understand the world. Books are a treasure trove of knowledge. They contain the wisdom of generations, the discoveries of great minds, and the stories of diverse cultures. Reading books can educate us on history, science, literature, and countless other subjects. It's like having a mentor, guiding us through the complexities of life.

Reading skills develop critical thinking, analytical skills, and the ability to communicate well. A person who reads regularly has a broader vocabulary, better writing skills, and can express his thoughts and ideas. E-books and audio books have made reading more accessible and convenient. There is something timeless and intimate about holding a physical book, flipping its pages, and smelling the scent of paper and ink. Reading is a cornerstone of education, personal growth, and cultural enrichment. It empowers us with knowledge, broadens our perspectives, ignites our imagination, and equips us with essential skills. Reading is a journey that enriches our lives and shapes us into more informed, empathetic, and creative individuals.

Answer the following questions

i) What are some of the benefits of reading mentioned in the passage?

ii) How does reading broaden our horizons and foster empathy?

iii) What role does reading play in developing critical thinking and communication skills?

iv) What are the advantages of reading physical books compared to digital formats?

v) How does Reading make a full man?

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(S) 23/011 (AN) (BR23)/BR20 FN

Course Code: 23ES1T03

BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

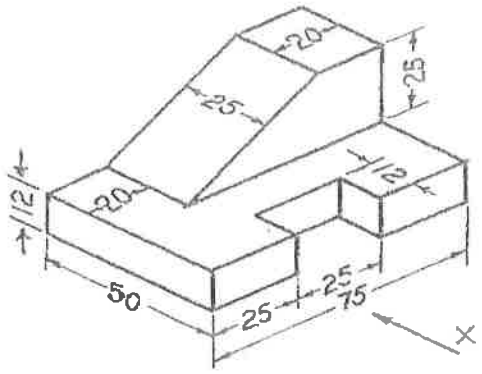
I B.Tech I Semester Regular/Supplementary Examinations (BR23)- JAN-2026

ENGINEERING GRAPHICS (Common to CSE, CSM, IT, AIML&(AI&DS))

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	
1.a)	Construct a parabola that has a distance of 60 mm between the focus and the directrix. Draw Tangent and Normal at any point on the curve.	(7M)
1. b)	Construct a plain scale to show meters when 1 centimetre represents 4 meters, and long enough to measure up to 50 meters. Find the R.F. and mark on your scale a distance of 36 meters.	(7M)
	(OR)	
1.c)	Draw a Cycloid when the radius of the generating circle is 30 mm. Draw a normal and a tangent to the Cycloid at any point on it.	(14M)
	UNIT-II	
2.a)	Draw the projections of the following points on the same ground line, keepingthe Projectors 25mm apart. a) A,25mm above the H.P. and in the V.P. b) B,50mm behind the V.P. and in the H.P. c) C,30mm below the H.P. and 40mm Infront of the V.P. d) D,25mm above the H.P. and 35mm behind the V.P. e) E,40mm above the H.P. and 30mm Infront of the V.P. f) F,35mm below the H.P. and 20mm behind the V.P. g) G, in both the V.P. and the H.P.	(14M)
	(OR)	
2.c)	A line AB is on HP, and its one end A is 20mm in front of V.P. The line makes an angle of 45^0 with VP, and its front view is 50 mm long. Draw the projections of the line and determine the true length.	(7M)
2.d)	A pentagonal plate of side 40mm is placed with one side on the HP and the surface inclined at 45^0 to HP and perpendicular to VP. Draw the projection of the lamina.	(7M)
	UNIT-III	
3.a)	A hexagonal pyramid, base 30 mm side and axis 50 mm long, has an edge of its base on the ground and its axis is inclined at 30^0 to the ground and parallel to V.P. Draw its projections.	(14M)
	(OR)	
3.c)	Draw the projections of a pentagonal pyramid, base 30 mm edge and axis 50 mm long, having its base on the H.P., and the edge of the base is parallel to the V.P.	(7M)
3. d)	Draw the projections of (i) a cylinder, base 40 mm diameter and axis 50 mm long, and (ii) a cone, base 40 mm diameter and axis 50 mm long, resting on the H.P. on their respective bases.	(7M)
	UNIT-IV	
4.a)	A cylinder of 40mm diameter and 60mm height has its axis vertical. It is cut by a section plane perpendicular to VP and inclined at 45^0 to HP and intersecting the axis 30mm above the base. Draw the front view, sectional top view, and true shape of the section.	(14M)
	(OR)	

4.c)	A square pyramid with a base of 40 mm side and axis 60mm long is resting on its base on HP, with one of the sides of base parallel to VP. It is cut by a section plane perpendicular to VP and inclined $45^0$to HP and bisecting the axis. Draw the development of lateral surfaces.	(14M)
	UNIT-V	
5.a)	Draw the front view, top view and side view of the object as shown in Figure 1 below 	(14M)
	(OR)	
5.c)	Draw the isometric view of a hexagonal pyramid of side of base 30 mm and height 75 mm, when it is resting on HP such that an edge of the base is parallel to VP.	(14M)

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(AUTONOMOUS)

I B.Tech I Semester Regular / Supplementary Examinations JAN-2026 (BR23)

ENGINEERING GRAPHICS (Common to CSE, CSM, AIML & (AI&DS))

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

1.a) Construct a hyperbola when the distance between its focus and directrix is 65 mm, and the eccentricity is 3/2. (7M)

b) Construct a diagonal scale of R.F.=1/4000 to show meters and long enough to measure up to 500 meters. Mark a distance of 374 meters on the scale. (7M)

(OR)

1.c) Draw an Involute when the radius of the generating circle is 30 mm. Draw a normal and a tangent to the Involute at any point on it. (14M)

UNIT-II

2.a) Draw the projections of the following points on the same ground line, keepingthe Projectors 25mm apart. (14M)

a) P,40mm above the H.P. and in the V.P.

b) Q,30mm behind the V.P. and in the H.P.

c) R,40mm below the H.P. and 20mm in front of the V.P.

d) S,35mm above the H.P. and 15mm behind the V.P.

e) T,20mm above the H.P. and 45mm in front of the V.P.

f) U,25mm below the H.P. and 35mm behind the V.P.

g) V, in both the V.P. and the H.P.

(OR)

2.c) A line AB, 65 mm long, has its end A 20 mm above the H.P. and 25 mm in front of the V.P. The end B is 40 mm above the H.P. and 65 mm in front of the V.P. Draw the projections of AB and show its inclinations with the H.P. and the V.P. (14M)

UNIT-III

3.a) A hexagonal prism, base 30mm side and axis 60mm long, has an edge of the base parallel to the H.P. Its axis makes an angle of 30° with the H.P. and perpendicular to V.P. Draw its projections. (14M)

(OR)

3.c) A cylinder of base diameter 50 mm and height of the cylinder is 65 mm, axis perpendicular to the H.P., and one base is 40 mm above the H.P., and the axis is 60 mm in front of the V.P. Draw the projections of the cylinder. (7M)

d) A cube of 50 mm long edges is resting on the H.P., with its vertical faces equally inclined to the V.P., draw its projections. (7M)

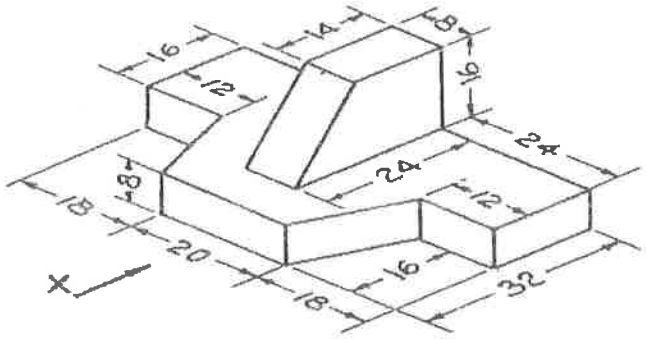
4.a) A square pyramid with a base of 30 mm side and axis 60mm long is resting on its base on HP, with one of the sides of the base parallel to VP. It is cut by a section plane perpendicular to VP and inclined 45^0 to HP and bisecting the axis. Draw its front view, sectional top view, true shape of the section. (14M)

(OR)

4.c) A right circular cylinder of 50mm base diameter and axis 80mm long is resting on the ground on one of its bases. It is cut by a section plane perpendicular to VP and inclined 30^0 to HP. Draw the development of the truncated cylinder. (14M)

UNIT-V

5.a) Draw the front view, top view and side view of the object as shown in Figure 1 below (14M)



(OR)

5.c) Draw the Isometric view of a Cylinder of base 50mm diameter and height 75mm when its axis is (i) Vertical and (ii) Horizontal. (14M)

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BONAM VENKATA CHALAMAYYA ENGINEERING COLLEGE::ODALAREVU
(AUTONOMOUS)

23/01/2026

I B.Tech I Semester Regular/ Supplementary Examinations (BR23) – JAN-2026

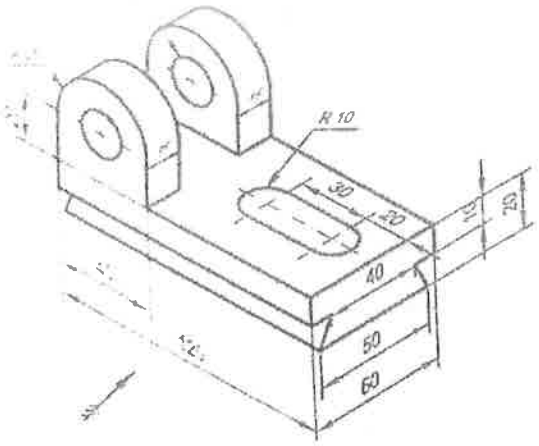
ENGINEERING GRAPHICS (Common to CSE, CSM, IT, AIML & (AI&DS))

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

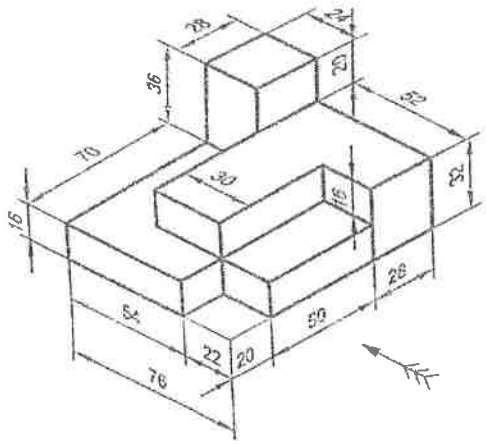
	UNIT-I	
1.a)	Construct an ellipse when the distance between the focus and directrix is 35 mm and eccentricity is 3/4. Also draw the tangent and normal to any point on the curve.	(14M)
	(OR)	
1.c)	Construct a hypo cycloid of a circle of 50 mm diameter, which rolls inside another circle of 180 mm diameter for one revolution counter clockwise.	(14M)
	UNIT-II	
2.a)	Draw the projections of a straight line AB of 70 mm long, in the following positions: a. Parallel to both HP and VP and 20 mm from each.. b. Parallel to and 20 mm above the HP and on VP. c. Parallel to and 30 mm in front of VP and on HP.	(14M)
	(OR)	
2.c)	A thin $30^\circ - 60^\circ$ set-square has its longest edge (diagonal) on HP and inclined at 30° to VP. Its surface makes an angle of 45° with HP. Draw the projections, choosing suitable size for the set-square.	(14M)
	UNIT-III	
3.a)	A hexagonal pyramid, base 25mm side and axis 50mm long, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallel to the VP. Draw its projections.	(14M)
	(OR)	
3.c)	A pentagonal prism of base side 30mm and axis 60mm has one of its rectangular faces on the HP and the axis inclined at 60^0 to the VP. Draw its projections.	(14M)
	UNIT-IV	
4.a)	A hexagonal pyramid, base 25mm side and axis 50mm long, has an edge of its base on the ground. A section plane inclined at 40^0 to HP passing through the midpoint of the axis. Draw the sectional top view and true shape of the section.	(14M)
	(OR)	
4.c)	A square prism of base 40 mm side and axis 60 mm has its base on HP. Draw the development of lateral surface of square prism.	(14M)

5.a)	Draw FV, TV and RSV of a given isometric view (All dimensions are in mm).	(14M)



(OR)

5.c)	Draw FV, TV and LSV of a given isometric view (All dimensions are in mm)	(14M)



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