



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

L.B. Reddy Nagar :: Mylavaram-521 230 :: NTR Dist. :: A.P
Approved by AICTE, New Delhi. Affiliated to JNTUK, Kakinada

B.Tech. (II Semester) (R20) Semester End Examinations (Supplementary) - November 2025

TIME TABLE

R20**Time : 02.00 PM to 05.00 PM****A.Y. : 2025-26**

Branch	10-11-2025 (Monday)	11-11-2025 (Tuesday)	12-11-2025 (Wednesday)	13-11-2025 (Thursday)	14-11-2025 (Friday)	15-11-2025 (Saturday)
AI & DS	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE07 - Applied Physics	20CS04 - Discrete Mathematical Structures	20CS03 - Data Structures	20MC01 - Constitution of India
ASE	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE08 - Engineering Physics	20CS01 - Programming for Problem Solving using C	20AE01 - Elements of Aerospace Engineering	20MC01 - Constitution of India
CE	20FE02 - Professional Communication -II	20FE04 - Linear Algebra and Transformation Techniques	20FE08 - Engineering Physics	20CS01 - Programming for Problem Solving using C	20CE03 - Applied Mechanics	20MC01 - Constitution of India
CSE	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE06 - Engineering Chemistry	20CS05 - Python Programming	20CS03 - Data Structures	20MC01 - Constitution of India
CSE (AI & ML)	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE06 - Engineering Chemistry	20CS05 - Python Programming	20CS03 - Data Structures	20MC01 - Constitution of India
ECE	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE06 - Engineering Chemistry	20CS01 - Programming for Problem Solving Using C	20EC02 - Digital Logic Circuits	20MC01 - Constitution of India
EEE	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE05 - Applied Chemistry	20CS01 - Programming for Problem Solving using C	20EE04 - Fundamentals of Electrical Engineering	20MC01 - Constitution of India
IT	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE07 - Applied Physics	20CS05 - Python Programming	20CS03 - Data Structures	20MC01 - Constitution of India
ME	20FE02 - Professional Communication-II	20FE04 - Linear Algebra and Transformation Techniques	20FE08 - Engineering Physics	20CS01 - Programming for Problem Solving using C	20ME02 - Engineering Mechanics	20MC01 - Constitution of India

Note: Any omissions or clashes in the time table may please be informed to the Controller of Examinations immediately.

Date: 24-10-2025

CONTROLLER OF EXAMINATIONS

PRINCIPAL

Copy to: 1. Vice-Principal, Deans & HoDs 2. T&P cell, Transport in-charge & Librarian
3. Canteen, PD, Security & Hostels 4. Coordinator-Disciplinary 5. Notice Boards

H.T.No.

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10 NOV 2025

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**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist.::A.P.

B.Tech. (II Semester) Supplementary Examinations

20FE02-PROFESSIONAL COMMUNICATION-II

(Common to All)

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL												
1(a)	What made Wells realise that there can be no static future utopia?	7M	CO1	L2												
(b)	Fill in the blanks with correct word from the options given below. (i) There are too ___(many/more) students in the library. (ii) Have you visited ___(any/some) foreign countries? (iii) I spend ___(many/most) of my time reading novels. (iv) He knows___(little/a little) English. He knows enough to manage. (v) He's having ___(a lot/lots) of trouble passing his driving test. (vi) How___(much/many) time do you need to finish the work? (vii) I need ___(any/some) help with my homework.	7M	CO1	L1												
(OR)																
2(a)	Why was Wells worried about the future of humanity?	7M	CO1	L2												
(b)	Write a paragraph on the given bar chart below. <div style="text-align: center;">Usage of social media at different cities in India</div> <table border="1" style="margin-left: auto; margin-right: auto;"><caption>Usage of social media at different cities in India</caption><thead><tr><th>City</th><th>Percentage</th></tr></thead><tbody><tr><td>Bombay</td><td>70</td></tr><tr><td>Delhi</td><td>60</td></tr><tr><td>Kolkata</td><td>50</td></tr><tr><td>Bengaluru</td><td>40</td></tr><tr><td>Hyderabad</td><td>40</td></tr></tbody></table>	City	Percentage	Bombay	70	Delhi	60	Kolkata	50	Bengaluru	40	Hyderabad	40	7M	CO1	L2
City	Percentage															
Bombay	70															
Delhi	60															
Kolkata	50															
Bengaluru	40															
Hyderabad	40															
(OR)																
3(a)	Does discrimination still exist in the society? Support your answer with relevant details.	7M	CO2	L2												
(b)	Change the following sentences into passive voice. (i) The boy teased the girl (ii) Did she do her duty (iii) The police have caught the thief (iv) She was writing a story (v) Someone has stolen my pen (vi) They will win the game (vii) Lata sings lovely songs.	7M	CO2	L1												
(OR)																

20FE02-PROFESSIONAL COMMUNICATION-II

4(a)	Sketch the of Sui Sin Far through the lesson “Leaves from the mental portfolio of a Eurasian”.	7M	CO2	L2
(b)	Write an essay on “Impact of covid-19 on our life”.	7M	CO2	L3
(OR)				
5(a)	What was the topic of Homi Bhabha's Ph.D. research at Cambridge? Explain his research experiences in detail.	7M	CO3	L1
(b)	Write a letter to your area post-master regarding the improper delivery of letters.	7M	CO5	L3
(OR)				
6(a)	My success will not depend on what A or B thinks of me. My success will be what I make of my work. - Homi J. Bhabha – Discuss in detail.	7M	CO3	L1
(b)	Write a report in 100-125 words on ‘No Tobacco’ campaign organized by your college in the academic session 2020-21. You are Deep/ Deepa, Cultural Secretary, Hyderabad.	7M	C05	L3
(OR)				
7(a)	What vision Bhabha has realized that the development of nuclear energy was crucial for the future industrial growth of the country?	7M	CO5	L3
(b)	What is the structure of report writing? What type of language should be used in report writing? How should you organize your content in report writings?	7M	CO5	L3
(OR)				
8(a)	What role did Homi Jehangir Bhabha in the development of nuclear science in India?	7M	CO1	L1
(b)	(i) Write the Antonym of the Following – Advanced, Callous, Domestic, Compliment (ii) Write a conversation between you and bank manager regarding to open of an account in the bank.	7M	CO4	L1
(OR)				
9(a)	How did Prafulla Chandra Ray contribute to society?	7M	CO3	L1
(b)	Write a resume with a covering letter to the manager of the company applying for the post of a software engineer.	7M	CO5	L3
(OR)				
10(a)	Prafulla Chandra Ray is known as the Milton of Bengal. Explain.	7M	CO3	L1
(b)	Write a resume with a covering letter for the post of a clerk in a reputed bank.	7M	CO5	L3

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**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist.:: A.P.

B.Tech. (II Semester) Supplementary Examinations

20FE04-LINEAR ALGEBRA AND TRANSFORMATION TECHNIQUES

(Common to All)

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Find non - singular matrices P and Q, PAQ is in the normal form for the matrix $\begin{bmatrix} 1 & -1 & 2 \\ 1 & 2 & 3 \\ 0 & -1 & -1 \end{bmatrix}$	7M	CO1	L3
(b)	Solve completely the system of equations $x + 3y - 2z = 0$, $2x - y + 4z = 0$, $x - 11y + 4z = 0$.	7M	CO1	L3
(OR)				
2(a)	Reduce the matrix into its Echelon form and hence find its rank $\begin{bmatrix} 1 & 2 & 3 & 0 \\ 2 & 4 & 3 & 2 \\ 3 & 2 & 1 & 3 \\ 6 & 8 & 7 & 5 \end{bmatrix}$	7M	CO1	L3
(b)	Investigate the values of λ and μ so that the simultaneous equations $2x + 3y + 5z = 9$, $7x + 3y - 2z = 8$, $2x + 3y + \lambda z = \mu$ have (i) no solution (ii) a unique solution (iii) an infinite number of solutions.	7M	CO1	L3
3.	Verify Cayley - Hamilton theorem for the matrix A and find its inverse $A = \begin{bmatrix} 7 & 2 & -2 \\ -6 & -1 & 2 \\ 6 & 2 & -1 \end{bmatrix}$	14M	CO2	L3
(OR)				
4(a)	Find the Eigen values and Eigen vectors of the matrix $\begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$	7M	CO2	L3
(b)	Prove that sum of Eigen values is equal to trace of the matrix.	7M	CO2	L3
5(a)	Find $L[t \cos at]$	7M	CO3	L3
(b)	Evaluate $\int_0^{\infty} te^{-2t} \sin t dt$	7M	CO3	L3

(OR)

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20FE04-LINEAR ALGEBRA AND TRANSFORMATION TECHNIQUES

6(a)	Find $L[e^{2t} \cos^2 t]$	7M	CO3	L3
(b)	Find $L\left[\frac{1-e^t}{t}\right]$	7M	CO3	L3
7(a)	Using convolution theorem evaluate $L^{-1}\left[\frac{s}{(s^2+a^2)^2}\right]$	7M	CO4	L3
(b)	Solve by the method of Laplace transforms, the equation $y'' - 3y' + 2y = e^{3t}, y(0) = 1$ & $y'(0) = 0$	7M	CO4	L3
(OR)				
8(a)	Find $L^{-1}\left(\log \frac{s^2+1}{s(s+1)}\right)$	7M	CO4	L3
(b)	Find the inverse Laplace transform of $\frac{1}{s^2-5s+6}$	7M	CO4	L3
9(a)	Find Z-transform of $(\cos\theta + i\sin\theta)^n$ and hence deduce the values of $Z(\cos n\theta)$ and $Z(\sin n\theta)$.	7M	CO5	L3
(b)	If $U(z) = \frac{2z^2+3z+12}{(z-1)^4}$ then find $u(2)$ and $u(3)$	7M	CO5	L3
(OR)				
10(a)	Using Convolution theorem Find $Z^{-1}\left[\frac{z^2}{(z-2)(z-6)}\right]$	7M	CO5	L3
(b)	Using Z - Transform solve the difference equation $y_{n+2} + 4y_{n+1} + 3y_n = 3^n, y_0 = 0, y_1 = 1$	7M	CO5	L3

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B.Tech. (II Semester) ~~Regular~~ / Supplementary Examinations

20FE07-APPLIED PHYSICS

(AI&DS and IT)

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Derive an expressions for the diameters of dark and bright rings of Newton's rings.	7M	CO1	L2
(b)	In a Newton's rings experiment, the diameter of the 12 th ring changes from 1.45 cm to 1.25 cm when a liquid is introduced between the lens and the glass plate. Find the refractive index of the liquid.	7M	CO1	L3
(OR)				
2(a)	Illustrate the diffraction due to circular aperture and estimate the radius of Airy's disc.	7M	CO1	L2
(b)	Distinguish Fraunhofer and Fresnel diffraction.	7M	CO1	L1
3(a)	Relate Einstein's coefficients.	7M	CO2	L2
(b)	Enumerate the applications of laser.	7M	CO2	L1
(OR)				
4(a)	Explain working principle of laser. Discuss different types of optical fibers.	7M	CO2	L2
(b)	What are the applications of optical fibers?	7M	CO2	L1
5(a)	Show that the de-Broglie wavelength of an electron accelerated through a potential difference V is $\lambda = h / \sqrt{2meV}$.	7M	CO3	L3
(b)	Derive Schrodinger time independent and wave equation.	7M	CO3	L3
(OR)				
6(a)	Distinguish conductors, semiconductors and insulators basing on the band theory of solids.	7M	CO3	L1
(b)	Determine the temperature at which there is 10 % probability of a state with an energy 0.8 eV above Fermi energy.	7M	CO3	L3
7(a)	List out the applications of solar cell.	7M	CO4	L1
(b)	Describe the drift and diffusion currents in a semiconductor.	7M	CO4	L2
(OR)				
8(a)	State Hall Effect. Obtain an expression for Hall coefficient.	7M	CO4	L2
(b)	Hall coefficient and conductivity of Cu at 300 K have been measured to be $-0.55 \times 10^{-10} \text{ m}^2 \text{A}^{-1} \text{s}^{-1}$ and $5.9 \times 10^7 \text{ } \Omega^{-1} \text{m}^{-1}$, respectively. Determine the drift mobility and density of electrons in copper.	7M	CO4	L3
9(a)	Explicate the hysteresis loop observed in Ferromagnetic materials.	7M	CO5	L2
(b)	Differentiate soft and hard magnetic materials.	7M	CO5	L1
(OR)				
10(a)	Deduce an expression for internal electric field.	7M	CO5	L2
(b)	The polarizability of Ne gas is $0.5 \times 10^{-40} \text{ Fm}^2$. If the gas contains $4 \times 10^{25} \text{ atoms m}^{-3}$ at 0°C and 1 atmospheric pressure, determine its dielectric constant.	7M	CO5	L3

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B.Tech. (II Semester) Supplementary Examinations

**20FE08-ENGINEERING PHYSICS
(ASE,CE&ME)**

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Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Classify various types of elastic modulus and obtain the relation between bulk modulus (K) and Young's modulus (Y) as $K = \frac{Y}{3(1-2\sigma)}$.	7M	CO1	L3
(b)	A steel wire with 2.75m length and 1×10^{-3} m diameter is attached to a beam at its upper end. If a load of 1 kg is suspended from the lower end, find the elongation Δl in the material. ($Y = 2 \times 10^{11}$ N/m ²).	7M	CO1	L3
(OR)				
2(a)	Discuss the elastic behavior of a material under gradually increasing tension.	7M	CO1	L2
(b)	What is a cantilever? Explain its use in various aspects.	7M	CO1	L2
3(a)	Explain about absorption, spontaneous and stimulated emission of radiation in laser light.	7M	CO2	L1
(b)	Illustrate the construction and working of He-Ne laser.	7M	CO2	L2
(OR)				
4(a)	Outline the principle of total internal reflection.	7M	CO2	L1
(b)	Classify various types of optical fibers based on refractive index profile and modes of propagation.	7M	CO2	L2
5.	Define reverberation and reverberation time and derive Sabine's formula for reverberation time.	14M	CO3	L3
(OR)				
6(a)	What is an NDT technique? Explain through transmission method for non destructive testing.	7M	CO3	L2
(b)	List out the applications of ultrasonic waves in various fields.	7M	CO3	L2
7(a)	What are domains? Explain the hysteresis curve based on domain theory.	7M	CO4	L2
(b)	Define permeability and susceptibility of magnetic materials. Obtain the relations $B = \mu_0(H+I)$ and $\mu_r = (1+\chi)$.	7M	CO4	L2
(OR)				
8(a)	Derive an equation for internal field for a dielectric material having cubic symmetry.	7M	CO4	L3
(b)	Mention various applications of dielectric materials.	7M	CO4	L2
9(a)	Distinguish between type I and type II superconductors.	7M	CO5	L2
(b)	Explain about Cryotron, SQUID and magnetic levitation.	7M	CO5	L2
(OR)				
10(a)	Discuss about the advantages and disadvantages of nano materials in detail.	7M	CO5	L2
(b)	Describe the chemical vapour deposition method (CVD) and arc discharge method for the preparation of nano materials with a neat sketch.	7M	CO5	L2

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B.Tech. (II Semester) Supplementary Examinations

20FE06-ENGINEERING CHEMISTRY
(CSE, CSE(AI&ML) and ECE)

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

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Q.No	Questions	Marks	CO	BL
1.	Explain in detail about working principle of "Fuel Cell" with schematic diagram.	14M	CO1	L2
(OR)				
2(a)	Write a note on "Lead-acid battery".	7M	CO1	L2
(b)	What are the applications of Nernst Equations?	7M	CO1	L2
3(a)	State the principle of cathodic protection. How the sacrificial anodic protection controls corrosion?	7M	CO2	L2
(b)	Explain effect of environment of rate of corrosion.	7M	CO2	L2
(OR)				
4(a)	How does dry corrosion occur? Discuss oxidative corrosion.	7M	CO2	L2
(b)	When does concentration cell corrosion occur? How corrosion of metal rod partially immersed in water occur?	7M	CO2	L2
5(a)	Why rotaxanes and catenanes are used as artificial molecular machines? Discuss their structural aspects in brief.	7M	CO3	L2
(b)	How to prepare nano-materials using gas phase synthesis?	7M	CO3	L2
(OR)				
6(a)	Outline types of materials that make CPU and PCBs.	7M	CO3	L1
(b)	List out the applications of nano materials.	7M	CO3	L2
7(a)	Explain liquid crystals with suitable examples.	7M	CO4	L2
(b)	Differentiate between thermoplasts and thermosets.	7M	CO4	L2
(OR)				
8(a)	Explain the engineering applications of (i) PMMA (ii) Teflon and (iii) Polycarbonate	7M	CO4	L2
(b)	What are the different types of polymerization reactions?	7M	CO4	L2
9(a)	Describe conductometric titration of weak acid and strong base.	7M	CO5	L2
(b)	Explain determination of ferric ion using KCNS by colorimetry.	7M	CO5	L2
(OR)				
10(a)	How to estimate the end point of the titration of redox titration using potentiometry?	7M	CO5	L2
(b)	Explain conductometric titration of HCl vs NaOH.	7M	CO5	L2

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B.Tech. (II Semester) Supplementary Examinations

**20FE05-APPLIED CHEMISTRY
(EEE)**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Describe the ion-exchange process of softening of hard water and write its merits and demerits.	7M	CO1	L2
(b)	What is the principle of reverse osmosis? Explain how sea water is purified by using this technique.	7M	CO1	L2
(OR)				
2(a)	Explain temporary and permanent hardness of water and mention the units of hardness in which the hardness of water is expressed.	7M	CO1	L2
(b)	Discuss scale formation and sludge formation in boilers. How are they removed?	7M	CO1	L2
(OR)				
3(a)	List out merits and demerits of solid, liquid and gaseous fuels.	7M	CO2	L2
(b)	Explain moving bed catalytic process to manufacture petrol.	7M	CO2	L2
(OR)				
4(a)	What is CNG? Discuss advantageous of using it.	7M	CO2	L2
(b)	How to prepare petrol using Fischer -Tropsch's process?	7M	CO2	L2
(OR)				
5(a)	Explain the construction and working of Li-ion battery.	7M	CO3	L2
(b)	How fuel cell is made? Explain how it produces power.	7M	CO3	L2
(OR)				
6(a)	Describe making and working principle of glass electrode.	7M	CO3	L2
(b)	Summarize the applications of electrochemical series.	7M	CO3	L2
(OR)				
7(a)	Explain the reaction and mechanism of electrochemical corrosion.	7M	CO4	L1
(b)	Write a note on "sacrificial anodic protection method" with neat sketch.	7M	CO4	L2
(OR)				
8(a)	Distinguish between dry and wet corrosion.	7M	CO4	L1
(b)	Write a note on (i) galvanic corrosion and (ii) Pilling Bed Worth Rule.	7M	CO4	L2
(OR)				
9(a)	Discuss advantages of composite materials.	7M	CO5	L2
(b)	Summarize applications of nano materials.	7M	CO5	L2
(OR)				
10(a)	How to prepare PVC? Write its properties and applications.	7M	CO5	L2
(b)	Outline the characteristics of good lubricant.	7M	CO5	L2

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B.Tech. (II Semester) Supplementary Examinations

20CS04-DISCRETE MATHEMATICAL STRUCTURES

(AI&DS)

Time : 3 hours

Max. Marks :70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Draw the truth tables for the following (i) $(P \rightarrow Q) \vee (P \wedge \sim Q)$ (ii) $(P \rightarrow (Q \vee R)) \wedge P \wedge \sim Q \wedge \sim R$.	7M	CO1	L1
(b)	Show that $(P \rightarrow (Q \vee R)) \wedge P \wedge \sim Q \wedge \sim R$ is a contradiction without using a truth table.	7M	CO1	L2
(OR)				
2(a)	Define NAND, NOR and XOR and give their truth tables.	7M	CO1	L1
(b)	Define Exclusive & inclusive disjunctions with an example.	7M	CO1	L1
3(a)	Discuss about operations on sets with examples.	7M	CO2	L2
(b)	If $A=\{1,2,3,4\}$ and R,S are relations on A defined by $R=\{(1,2), (1,3), (2,4), (4,4)\}$ $S=\{(1,1), (1,2), (1,3), (1,4), (2,3), (2,4)\}$. Find ROS, SOR, R^2, S^2 and write down their matrices.	7M	CO2	L3
(OR)				
4(a)	Determine whether the relation is reflexive, symmetric, anti-symmetric, and transitive, let $A=\{1,2,3,4\}$ and $R=\{(1,1), (1,2), (1,3), (2,3), (3,1), (2,4), (4,4)\}$ and find whether R is equivalent? Or not?	7M	CO2	L3
(b)	Construct the Hasse diagram that representing the Partial Ordering on $\{(a, b) \mid a \text{ divides } b\}$ on $\{1, 2, 3, 4, 6, 8, 12\}$.	7M	CO2	L1
5(a)	Prove that a connected graph G is Euler graph if and only if every vertex of G is of even degree.	7M	CO3	L2
(b)	Show that isomorphism of that simple graphs is an equivalent relation.	7M	CO3	L2
(OR)				
6(a)	Explain about complete graph and planar graph with an example.	7M	CO3	L1
(b)	Define the following graph with one suitable examples for each graphs complement graph (ii) subgraph (iii) induced subgraph (iv) spanning subgraph.	7M	CO3	L2
7(a)	List the number of integers <500 and divisible by 9 or 11 or 13.	7M	CO4	L4
(b)	Find the number of permutations of the letters of the word MASSASAUGA. In how many of these, all four A's are together. How many of them begin with S?	7M	CO4	L3
(OR)				
8(a)	Show that $G = \{1, -1, i, -i\}$ is an abelian group under multiplication.	7M	CO4	L2
(b)	State and prove Lagrange's Theorem.	7M	CO4	L2
9(a)	Construct the generating function for the following sequences: (i) 1,1,1,1,1,1,..... (ii) 1,0,3,-2,....	7M	CO5	L3
(b)	Solve the recurrence relation using by the method of characteristic roots $a_n - a_{n-1} - 9a_{n-2} + 9a_{n-3} = 0$ where $n \geq 3$ with $a_0 = 0, a_1 = 1, a_2 = 2$.	7M	CO5	L3
(OR)				
10(a)	Solve $a_n = a_{n-1} + 2a_{n-2}, n > 2$ with condition the initial $a_0 = 0, a_1 = 1$.	7M	CO5	L3
(b)	Solve $a_{n+2} - 5a_{n+1} + 6a_n = 2$, with condition the initial $a_0 = 1, a_1 = -1$.	7M	CO5	L3

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B.Tech. (II Semester) Supplementary Examinations

**20CS01-PROGRAMMING FOR PROBLEM SOLVING USING C
(ASE,CE,ECE,EEE & ME)**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

13/11/26

Q.No	Questions	Marks	CO	BL
1(a)	Draw a Flowchart for finding roots of quadratic equation.	7M	CO1	L2
(b)	Distinguish between while and do-while loops in C with syntax and suitable examples.	7M	CO1	L3
(OR)				
2(a)	Discuss different Control statements available in C.	7M	CO1	L2
(b)	Write a program that displays numbers from 1 to 100 that are divisible by 3.	7M	CO1	L3
3(a)	With an example for each, show how a character array can be initialized in various ways.	7M	CO2	L3
(b)	Demonstrate strcpy, strcat, strlen, and strcmp functions with an example program for each.	7M	CO2	L3
(OR)				
4(a)	Design an algorithm to find out the length of the string without using strlen() function. Explain it with example.	7M	CO2	L3
(b)	Define preprocessor directive. Discuss #define and #include preprocessor directives. Define PI with macro.	7M	CO2	L2
5(a)	List out some pre-defined functions available in C.	7M	CO3	L1
(b)	Write a function to return the GCD of two positive integers using recursion.	7M	CO3	L3
(OR)				
6(a)	What is a pointer? Explain about pointer arithmetic with examples.	7M	CO3	L2
(b)	Write a C program to swap two numbers using functions that use pass by reference method for parameters.	7M	CO3	L3
7(a)	What is self-referential structure? Give an example.	7M	CO4	L2
(b)	Discuss different approaches that can be used to pass structures as arguments to function.	7M	CO4	L2
(OR)				
8(a)	Define structure and create any structure with 3 members.	7M	CO4	L1
(b)	Explain self-referential structure concept with a suitable example.	7M	CO4	L2
9(a)	Compare and contrast fgetc() with fgets().	7M	CO5	L2
(b)	How do you copy the contents of one file into another file? Write a program for it.	7M	CO5	L3
(OR)				
10(a)	What is a file? Explain different types of files.	7M	CO5	L2
(b)	Write a C program to copy the contents of one file into another file.	7M	CO5	L1

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R20

**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist. :: A.P.

B.Tech. (II Semester) Supplementary Examinations

Booseef
13/11/25

20CS05-PYTHON PROGRAMMING

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

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Demonstrate the usage of break, continue and pass with syntax and examples.	7M	CO1	L2
(b)	Write a python script to print prime numbers between 100 and 200.	7M	CO1	L2
(OR)				
2(a)	Write a short note on history and features of python.	7M	CO1	L1
(b)	Explain If _else statement in python with syntax, flowchart and example.	7M	CO1	L2
3(a)	Discuss the built-in methods of Sets with examples.	7M	CO2	L2
(b)	List out advantages of Tuples over Lists.	7M	CO2	L1
(OR)				
4(a)	Explain built in function of tuple.	7M	CO2	L2
(b)	Discuss in detail about dictionaries in python.	7M	CO2	L2
5(a)	Give the syntax and example for following blocks: (i) try (ii) except (iii) raise (iv) finally	7M	CO3	L2
(b)	Write a python script which makes use of function to display all such numbers which are divisible by 7 but are not a multiple of 5, between 1000 and 2000.	7M	CO3	L3
(OR)				
6(a)	Discuss anonymous functions with example.	7M	CO3	L3
(b)	Compare global and local variables.	7M	CO3	L3
7(a)	Demonstrate basic string operations, length, Indexing and slicing with an appropriate example.	7M	CO4	L2
(b)	Tabulate and discuss different access modes for opening a file.	7M	CO4	L2
(OR)				
8(a)	Explain in briefly, What are the different methods of file operations supports in python shutil module.	7M	CO4	L1
(b)	What are the key properties of a file? Explain in detail file reading/writing process wit an example of python program.	7M	CO4	L2
9(a)	What is Abstraction? Discuss about Abstract Base Class and Abstract Method with suitable example.	7M	CO5	L2
(b)	Compare and Contrast Procedure Oriented Programming and Object Oriented Programming.	7M	CO5	L2
(OR)				
10(a)	Write a program that has a class Point with attributes as the X and Y co-ordinates. Make two objects of this class and find the midpoint of both the points.	7M	CO5	L3
(b)	Explain the following built-in class attributes. (i) __dict__ (ii) __doc__ (iii) __name__ (iv) __bases__	7M	CO5	L3

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**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist.: A.P.

B.Tech. (II Semester) Supplementary Examinations

20CS03-DATA STRUCTURES
(AI&DS, CSE, CSE(AI&ML) and IT)

Time : 3 hours

Max. Marks :70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1.	Define Recursion. Give examples for linear and non-linear recursion.	14M	CO1	L1
(OR)				
2.	Explain linear search procedure for the following list of elements and assume the key element is 96. 12, 23, 34, 45, 55, 62, 71, 85, 96.	14M	CO1	L3
3(a)	Write a program for implementing Queue using linked list.	7M	CO2	L2
(b)	Discuss the applications of DEQUE.	7M	CO2	L2
(OR)				
4(a)	What is the role of Stack in evaluation of expressions?	7M	CO2	L3
(b)	Implement Stack Operations using Arrays.	7M	CO2	L2
5(a)	Trace the data: 9, 7, 3, 1, 8, 6, and 11 Using Insertion sort technique.	7M	CO3	L3
(b)	Write the Insertion sort algorithm and discuss time complexities.	7M	CO3	L2
(OR)				
6(a)	Explain how to sort the elements by using insertion sort and derive time complexity for the same.	7M	CO3	L1
(b)	Write a Routine for sorting elements using quick sort method. Explain the working of the routing with an example.	7M	CO3	L1
7(a)	Write insertion, deletion and searching operations on AVL trees.	7M	CO1	L1
(b)	Discuss B-Trees with insert and delete operations.	7M	CO1	L1
(OR)				
8(a)	Give the procedure of creation and insertion of a node in a Binary Tree implemented using linked list.	7M	CO4	L2
(b)	List and Elaborate on the operations of a Binary Search Tree with an example. Comment on time complexity of these operations.	7M	CO4	L1
9(a)	What is meant by Separate Chaining? Explain separate chaining with suitable example.	7M	CO5	L2
(b)	What is a graph? Explain different graph representations with suitable examples.	7M	CO5	L2
(OR)				
10(a)	Define graph. Explain various operations on graphs.	7M	CO5	L2
(b)	Explain any algorithm for all pairs shortest path problem.	7M	CO5	L1

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**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: Krishna Dist.:: A.P.

B.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

**20AE01-ELEMENTS OF AEROSPACE ENGINEERING
(ASE)**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Success
14/11/25

Q.No	Questions	Marks	CO	BL
1(a)	Derive the relationship between pressure, density and temperature with Altitude.	7M	CO1	L3
(b)	Define Altitude and explain the force diagram for the Hydrostatic equation.	7M	CO1	L2
(OR)				
2(a)	Elaborate the control surfaces of an Airplane with a neat sketch.	7M	CO1	L1
(b)	Classify the types of aircrafts based on application and wing geometry.	7M	CO1	L1
3(a)	Explain the distribution of pressure coefficient and derive the equation.	7M	CO2	L2
(b)	Illustrate the induced drag and calculate by considering finite wing.	7M	CO2	L3
(OR)				
4(a)	Sketch and explain the definitions of (i) Lift, drag, moments angle of attack and relative wind (ii) Normal and axial force.	7M	CO2	L2
(b)	Describe in detail about the different types of drag that are induced on an airfoil.	7M	CO2	L2
5(a)	Explain the elements of a turbojet engine with the suitable diagram.	7M	CO3	L2
(b)	Differentiate the pressure-fed rocket engine and pump-fed rocket engine for liquid propellant.	7M	CO3	L2
(OR)				
6(a)	Illustrate the propeller by showing variation of pitch along the blade.	7M	CO2	L3
(b)	Derive the thrust equation for an air-breathing engine from first principle.	7M	CO2	L3
7(a)	Write a short note on the application of non-metallic alloys for aircraft composite.	7M	CO1	L1
(b)	Describe the applications of composite materials in recent aircrafts.	7M	CO1	L3
(OR)				
8.	Discuss briefly the engineering aspects considered for the selection of materials for aircraft construction.	14M	CO1	L2
9(a)	Classify the types of satellites based on their purpose and size.	7M	CO5	L1
(b)	Explain about space mission and its types.	7M	CO5	L1
(OR)				
10(a)	Give the general formulation of Lagrange's equation for a body moving in a three-dimensional space.	7M	CO5	L3
(b)	Write about Ballistic, glide re-entry procedures.	7M	CO5	L2

**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L.B.Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist.: A.P.

B.Tech. (II Semester) Supplementary Examinations

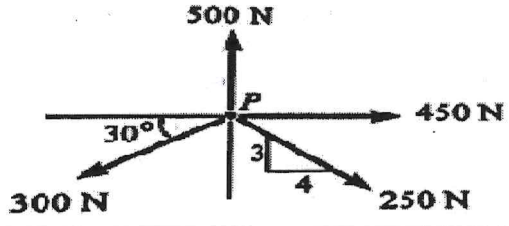
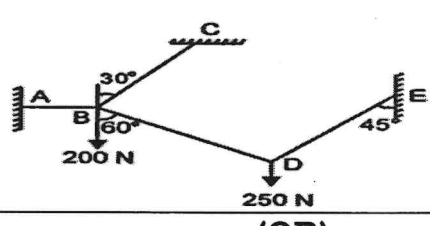
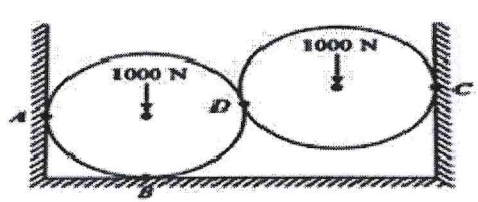
Review
14/11/25

**20CE03-APPLIED MECHANICS
(CE)**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Explain how you will reduce the system of coplanar, non-concurrent forces to a force and a couple.	7M	CO1	L2
(b)	Two forces of 80N and 70N act simultaneously at a point. Find the resultant force, if the angle between them is 150°.	7M	CO1	L3
(OR)				
2(a)	What is resolution of forces? Distinguish clearly between resolution of forces and composition of forces.	7M	CO1	L1
(b)	Find the resultant of the force acting on a particle P shown in figure. 	7M	CO1	L3
3(a)	Define Equilibrium and write its equations.	4M	CO2	L1
(b)	A system of connected flexible cable shown in Figure is supporting two vertical forces 200 N and 250 N at points B and D. Determine the forces in various segments of the cable. 	10M	CO2	L3
(OR)				
4(a)	State and prove lami's theorem.	4M	CO2	L2
(b)	Two spheres each of 1000N and of radius 25cm rest in a horizontal channel of width 90cm as shown in Figure. Find the reaction at the point of contact A, B and C. 	10M	CO2	L3
5(a)	State laws of friction.	4M	CO3	L1

20CE03-APPLIED MECHANICS

(b)	A body, resting on a rough horizontal plane, required a pull of 180 N inclined at 30° to the plane just to move it. It was found that a push of 220 N inclined at 30° to the plane just moved the body. Determine the weight of the body and the coefficient of friction.	10M	CO3	L3
(OR)				
6(a)	Calculate the force 'P' applied parallel to the plane, just to move the block up the plane, if the block weighing 500 N is placed on an inclined plane at an angle of 20° with the horizontal. Coefficient of friction is 0.14.	7M	CO3	L3
(b)	The top block weighs 1500 N. The angle α is 15°. The coefficient of static friction at all surfaces is $\mu = 0.4$. What is the smallest value of P to remove wedge ignore the weight of the wedge.	7M	CO3	L3
(OR)				
7(a)	Describe the Assumptions made for Forces in the Members of a perfect Frame.	4M	CO4	L3
(b)	List out in detail about Types of Frames with a neat sketch.	10M	CO4	L3
(OR)				
8.	A cantilever truss of 3m span is loaded as shown in fig. Find the forces in the various members of the frames truss and tabulate the results from both methods of sections and joints	14M	CO4	L3
(OR)				
9(a)	Describe the method of finding Moment of Inertia of composite areas.	7M	CO5	L2
(b)	Derive the mass moment of inertia of the rectangular plate about a line passing through the base.	7M	CO5	L2
(OR)				
10(a)	Define the following terms with examples (i) Centroid (ii) Centre of mass, and (iii) Centre of gravity.	7M	CO5	L1
(b)	Derive an expression for the center of gravity of a right circular solid cone about its base from first principles.	7M	CO5	L2

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**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L.B. Reddy Nagar :: Mylavaram – 521 230 :: Krishna Dist.:: A.P.

B.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

**20EC02-DIGITAL LOGIC CIRCUITS
(ECE)**

Time : 3 hours

Max. Marks : 70

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	What is the Binary, BCD and Gray code equivalent for the number $(69)_{10}$.	7M	CO1	L2
(b)	Determine the following operations (i) $(231)_{10} - (37)_{10}$ using 10's complement method (ii) $(13)_{10} - (159)_{10}$ using 9's complement method	7M	CO1	L3
(OR)				
2(a)	A receiver receives the hamming code 1110110 with an error. Identify the correct code by using even parity.	7M	CO1	L2
(b)	Perform $(1110)_2 - (1111)_2$ using 1's and 2's complement subtraction operation.	7M	CO1	L3
3(a)	Minimize the given function $F = \sum(1,2,3,5,7,9,11,13)$ use K-map method.	7M	CO2	L3
(b)	Obtain the complement of the following Boolean expressions. (i) $AB + A(B+C) + B'(B+D)$ (ii) $A + B + A'B'C$.	7M	CO2	L3
(OR)				
4(a)	Reduce the following function using k-map technique $F(A,B,C,D) = \sum(0,2,3,8,9,12,13,15)$.	7M	CO2	L3
(b)	Simplify each of the following expressions (i) $ab + a'bc' + bc$ (ii) $(ab' + c)(a + b')c$ (iii) $ab' + c + (a'+b)c'$.	7M	CO2	L3
5(a)	Prepare a combinational logic circuit for 2 bit magnitude comparator.	7M	CO4	L4
(b)	Realize the given functions using Multiplexer (i) $F_1(P,Q,R) = \sum m(2,3,4,6,7)$ (ii) $F_2(P,Q,R) = \sum m(1,3,5,7)$.	7M	CO3	L3
(OR)				
6(a)	Construct a combinational logic circuit for 3 bit Binary-to-Gray code converter.	7M	CO4	L4
(b)	Illustrate the operation of 4 X 16 line Decoder using cascading concept.	7M	CO1	L2
7(a)	Apply toggling concept of T Flip flop and realize MOD-5 up counter.	7M	CO3	L4
(b)	Compare Synchronous circuits and Asynchronous circuits.	7M	CO2	L2
(OR)				
8(a)	Convert a SR flip flop into JK-flip flop.	7M	CO3	L3
(b)	Develop a 3 bit Asynchronous down counter using J-K flip flops.	7M	CO4	L4
9(a)	With simple examples explain the differences between Mealy and Moore type machines.	7M	CO4	L4
(b)	Draw the diagram of Mealy type state machine for serial adder and explain its operation.	7M	CO4	L4
(OR)				
10(a)	What are the capabilities and limitations of finite state machines? Explain.	7M	CO4	L4
(b)	Explain the procedure of Mealy to Moore conversion.	7M	CO4	L4

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(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram - 521 230 :: NTR Dist.: A.P.

B.Tech. (II Semester) Supplementary Examinations

**20EE04-FUNDAMENTALS OF ELECTRICAL ENGINEERING
(EEE)**

Boys
14/11/25

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Evaluate i_o in the given circuit using mesh analysis and power absorbed by 30Ω resistor. <div style="text-align: center;"> </div>	7M	CO1	L1
(b)	Compute the equivalent resistance across A and B terminal in the given circuit <div style="text-align: center;"> </div>	7M	CO1	L3
(OR)				
2(a)	Illustrate KCL, KVL and Potential divider and Current divider rules.	7M	CO1	L1
(b)	Determine the node voltage V_x for the circuit given below. Also calculate power of every element. <div style="text-align: center;"> </div>	7M	CO2	L3
3(a)	In the circuit $R = 10\Omega$, $L = 1\text{ mH}$, and $C = 1\text{ }\mu\text{F}$. Find the resonant frequency, quality factor and bandwidth. and the Cut off frequencies. <div style="text-align: center;"> </div>	7M	CO2	L3
(b)	The voltage of a circuit is $v(t) = 200 \sin(\omega t + 30^\circ)$ V and the current is $i(t) = 50 \sin(\omega t + 90^\circ)$ A. Calculate complex power, average power, reactive power, apparent power and power factor.	7M	CO2	L3

(OR)

20EE04-FUNDAMENTALS OF ELECTRICAL ENGINEERING

4(a)	Calculate the Form Factor of the current wave form shown below.		7M	CO2	L2
(b)	Determine current delivered by source and V_o in the circuit.		7M	CO2	L3
5(a)	Write the main difference between magnetic and Electrical circuits.	7M	CO3	L1	
(b)	Calculate the phasor currents I_1 and I_2 in the circuit of figure below.		7M	CO3	L2
(OR)					
6(a)	Explain the concept of more than two coils coupled in series and derive the expressions for voltage induced, equivalent inductance.	7M	CO3	L1	
(b)	An iron ring of mean length 100cm and cross sectional area of 10cm ² has an air gap of 1mm cut in it. it is wound with a coil of 100 turns. Assume relative permeability of iron is 500. calculate inductance of coil.	7M	CO3	L2	
7(a)	Explain the functional elements of measuring Instrument.	7M	CO4	L2	
(b)	Describe the construction and working of an attraction type MI instrument.	7M	CO4	L2	
(OR)					
8(a)	Describe the construction and theory of operation of a single phase electrodynamic type wattmeter.	7M	CO4	L2	
(b)	Explain the working principle of CT error ratios of CT.	7M	CO4	L2	
9(a)	Demonstrate the circuit of a Kelvin's double bridge used for measurement of low resistance.	7M	CO5	L3	
(b)	Derive equation of balance for an Maxwell's inductance bridge.	7M	CO5	L3	
(OR)					
10(a)	Derive equation for balance for Schering capacitance bridge.	7M	CO5	L3	
(b)	Demonstrate the circuit of a Wheat Stone's bridge used for measurement of medium resistance.	7M	CO5	L3	

**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L.B. Reddy Nagar :: Mylavaram - 521 230 :: NTR Dist.: A.P.

B.Tech. (II Semester) Supplementary Examinations

20ME02-ENGINEERING MECHANICS

(ME)

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	<p>Find resultant of given system of forces as shown in figure.</p>	7M	CO1	L3
1(b)	<p>On a square ABCD of size 500mm, forces are acting along the sides in clockwise direction. The force on AB is 200kN, BC is 200kN, CD is 50kN and DA is 50kN. Determine the magnitude, direction and position of the resultant force.</p>	7M	CO1	L3
(OR)				
2(a)	<p>Applying the conditions of equilibrium to determine the tension in cords AB and BC for equilibrium of 20kg block shown in the figure.</p>	7M	CO1	L3
1(b)	<p>A chord supported at A and B carries a load of 10kN at a load of W at C as shown in fig. Evaluate the value of W so that CD remains horizontal.</p>	7M	CO1	L3
3.	<p>The coefficient of friction is $\mu = 0.40$ between all surfaces of contact. Determine the force P for which motion of the 60-lb block is impending if cable AB (i) is attached as shown, (ii) is removed.</p>	14M	CO2	L4

(OR)

20ME02-ENGINEERING MECHANICS

4(a)	Define the following terms (i) Friction (ii) Limiting friction (iii) Coefficient of friction and (iv) Angle of repose.	7M	CO2	L2
(b)	The force required to pull a body of weight 50N on a rough horizontal plane is 15N. Determine the μ if the force is applied at an angle of 15° with the horizontal.	7M	CO2	L3
5(a)	Locate the coordinates of the centroid of the plane area shown in Fig.	7M	CO3	L3
(b)	Derive the expression for area moment of inertia of the circle of radius 'r' about diametrical axis.	7M	CO3	L2
(OR)				
6(a)	Derive the centre of gravity of right circular cone from first principles.	7M	CO3	L2
(b)	A hemisphere of diameter 300 mm is symmetrically placed on the top base of a cylinder of diameter 200mm and height 300mm. Locate the centre of gravity of the composite volume.	7M	CO3	L3
7(a)	Derive from fundamentals all the three kinematic equations of linear motion having constant acceleration.	7M	CO4	L2
(b)	A particle under a constant deceleration is moving in a straight line and covers a distance of 20 m in first two seconds and 40 m in next 5 seconds. Calculate the distance it covers in the subsequent 3 seconds and the total distance covered, before it comes to rest.	7M	CO4	L3
(OR)				
8(a)	A train starts from rest at a station and travels with a constant acceleration of 1m/s^2 . Estimate the velocity of the train when $t=30\text{s}$ and the distance traveled during this time.	7M	CO4	L3
(b)	At a certain instant, a body of mass 10 kg, falling freely under the force of gravity, was found to be falling at the rate of 20 m/s. What force will stop the body in (i) 2 seconds and (ii) 2 meters?	7M	CO4	L3
9(a)	A motorist enters a freeway at 45 km/h and accelerates uniformly to 99 km/h. From the odometer in the car, the motorist knows that she travelled 0.2 km while accelerating. Estimate (i) the acceleration of the car, (ii) the time required to reach 99 km/h.	10M	CO5	L3
(b)	Write the units of the following quantities: (i) Angular velocity (ii) Angular acceleration (iii) Angular displacement (iv) Work done.	4M	CO5	L2
(OR)				
10.	A body weighing 1200 N rests on a rough plane inclined at 12° to the horizontal. It is pulled up the plane by means of a flexible rope running parallel to the plane and passing over a light friction less pulley at the top of the plane as shown in figure. The portion of the rope beyond the pulley hangs vertically down and carries a weight of 800 N at its end. If the coefficient of friction for the plane and body is 0.2, find: (i) Tension in rope (ii) Acceleration with which the body moves up the plane, and (iii) The distance moved by the body in 3 sec after starting from rest.	14M	CO5	L4

**LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)**

L.B. Reddy Nagar :: Mylavaram – 521 230 :: NTR Dist.: A.P.

B.Tech. (II Semester) ~~Regular~~/Supplementary Examinations

20MC01-CONSTITUTION OF INDIA
(Common to All)

15/11/25

Time : 3 hours

Max. Marks : 70

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	State preamble in constitution of India and its purpose.	7M	CO1	L2
(b)	Recall the fundamental duties of Indian citizens.	7M	CO1	L2
(OR)				
2(a)	Memorizes the committees of the Constituent Assembly.	7M	CO1	L2
(b)	Describe the unique features and contents of the Indian constitution.	7M	CO1	L2
(OR)				
3(a)	Outline the importance of jurisdiction in the Supreme Court.	7M	CO2	L2
(b)	Describe the role of Rajyasabha and loksabha in parliament.	7M	CO2	L2
(OR)				
4(a)	Summarize the executive and judicial powers of the Indian president.	7M	CO2	L2
(b)	Recall the powers and functioning of the prime minister in central government.	7M	CO2	L2
(OR)				
5(a)	Interpret the functions of the state council of ministers.	7M	CO3	L2
(b)	Classify the departments in the state secretariat according to the norms of the state government.	7M	CO3	L2
(OR)				
6(a)	Discuss the role and eligibility of the governor of state.	7M	CO3	L1
(b)	Describe the role of the chief minister in state government.	7M	CO3	L2
(OR)				
7(a)	Compare the changes in the modern Panchayati raj system with the Panchayati raj system.	7M	CO4	L2
(b)	Paraphrase the functioning of Grama Panchayats.	7M	CO4	L2
(OR)				
8(a)	Explain the importance of local government in contemporary society.	7M	CO4	L2
(b)	Interpret the affairs of local government to reach the needs of citizens.	7M	CO4	L2
(OR)				
9(a)	Discuss about the administrative structure of the election commission of India.	7M	CO5	L2
(b)	Mention the administrative powers of the election commission.	7M	CO5	L2
(OR)				
10(a)	Summarize the functions of the election commission of India.	7M	CO5	L2
(b)	Identify the schemes available for women's development in women empowerment.	7M	CO5	L2