O.P.Code: 19EE0242 | R19 | H.T.No.

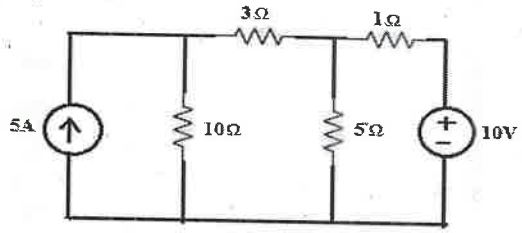
SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
NETWORK THEORY
(Electronics & Communications Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units 5 x 12 = 60 Marks)

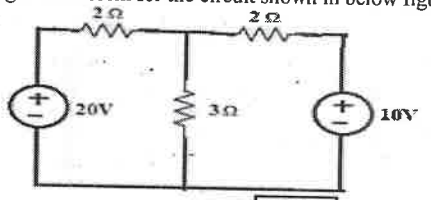
UNIT-I

1	a	Explain about Nodal analysis and write the steps for applying nodal analysis.	CO1	L2	6M
	b	Determine the current in 10Ω resistor for the following network by using nodal analysis.	CO1	L3	6M



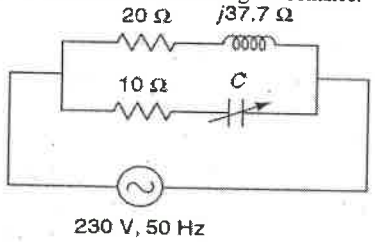
OR

2	a	Explain about Super Nodal analysis and write the steps for applying nodal analysis.	CO1	L3	6M
	b	Verify Tellegen"s theorem for the circuit shown in below figure.	CO1	L2	6M



UNIT-II

3	a	Explain about Quality factor and Band-width of Series resonance.	CO2	L3	6M
	b	Find the value of C in the circuit shown to get resonance.	CO2	L2	6M



OR

4	a	Explain about Propagation constant and Characteristic impedance in T-network filters.	CO2	L3	6M
	b	Design a Band-elimination filter having design impedance of 600Ω and cut-off frequencies f_1= 2kHz and f_2= 6 kHz.	CO2	L4	6M

UNIT-III

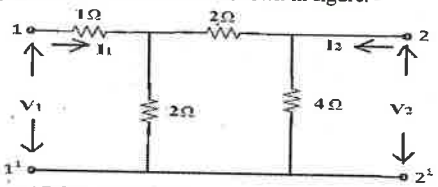
5		Derive the Transient Response of series RLC-circuit with D.C excitation.	CO3	L3	12M

OR

6	a	Derive the Transient Response of series RL-circuit with D.C excitation.	CO3	L3	6M
	b	A series RL circuit with R=30Ω and L= 15H has a constant voltage V=60v applied at t=0. Determine the current "I", voltage across resistor and voltage across inductor.	CO3	L2	6M

UNIT-IV

7	a	Find the h-parameters of the network shown in figure.	CO4	L3	6M



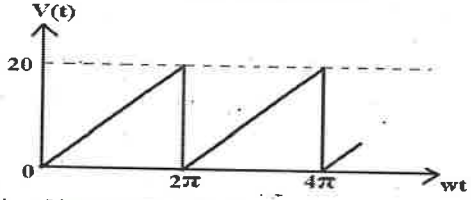
	b	Explain about ABCD-parameters.	CO4	L2	6M

OR

8	a	Derive the expressions for Y-parameters in terms of ABCD parameters.	CO4	L3	6M
	b	The given Y-parameters are, Y_{11}= 0.5, Y_{12}= Y21= 0.6, Y_{22}= 0.9.Find Z-parameters.	CO4	L2	6M

UNIT-V

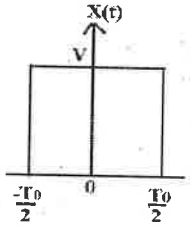
9	a	Find the Fourier series for the following waveform.	CO5	L3	6M



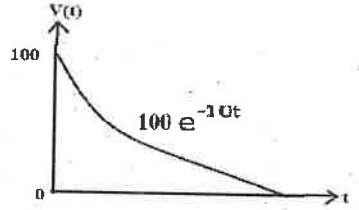
	b	Explain about Line spectrum and Phase spectrum.	CO5	L2	6M

OR

10		Determine the Fourier transforms of the following waveforms shown in figure (a) and figure (b).	CO5	L3	12M



fig(a)



fig(b)

*** END ***

O.P.Code: 19CS0505	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year I Semester Supplementary Examinations October/November-2025

C AND DATA STRUCTURES

(Common to CSIT & CSE)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Explain the general form of a C program with an example.	CO1	L1	6M
	b	Write a program to determine the Greatest Common Divisor (GCD)of two numbers.	CO5	L3	6M

OR

2		What is the purpose of a printf() and scanf() statements? Write a C program to find area of a triangle.	CO2	L2	12M

UNIT-II

3	a	List and explain the storage classes with examples.	CO1	L4	6M
	b	What is an array? What are the advantages of arrays over a ordinary variables? How arrays are declared and initialized?	CO2	L2	6M

OR

4	a	How to pass array elements as arguments to function? Explain with one example.	CO2	L2	6M
	b	What is 2D array? Write program for addition of 2 matrices.	CO4	L3	6M

UNIT-III

5	a	How to declare and initialize a structure with examples?	CO2	L2	6M
	b	Give the differences between structures and arrays.	CO2	L4	6M

OR

6	a	Briefly explain bit fields concept.	CO1	L2	6M
	b	Illustrate the use of typedef with suitable example.	CO2	L3	6M

UNIT-IV

7		What is a stack? What are various operations that can be performed on them? Explain with an example.	CO2	L2	12M

OR

8	a	Discuss application implementation. Of queue. Write a program on queue with array.	CO2	L5	6M
	b	What is data structure? Explain the linear and non linear data structure in detail.	CO1	L1	6M

UNIT-V

9		Implement the following single linkedlist operations: i).Insertion of a node ii).Deletion of a node iii).Searching an element	CO5	L3	12M

OR

10	a	lain insertion sort with an example.	CO2	L2	6M
	b	What do you mean by Searching? Explain sequential search and binary search with suitable example.	CO2	L2	6M

***** END *****

Q.P.Code: **19CS0506** | R19 | **H.T.No.**

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
DATABASE MANAGEMENT SYSTEMS
(Common to CSE & CSIT)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Draw the Architecture of Database.	CO1	L4	6M
	b	Discuss about Database users and Administrators.	CO1	L2	6M
		OR			
2	a	Briefly explain about Views of data.	CO1	L2	6M
	b	Explain about various data models.	CO1	L2	6M

UNIT-II

3	a	Explain the working of union, intersection and except operations.	CO2	L2	6M
	b	Give a examples ofclauses SELECT with an example.	CO2	L2	6M
		OR			
4	a	Distinguish between two set theoretic operations of relational algebra with an example.	CO2	L2	6M
	b	To establish the WHERE, ANY,AS and ALL sub queries with example.	CO2	L3	6M

UNIT-III

5	a	Define functional dependencies. How are primary keys related to FD's?	CO3	L1	6M
	b	What is redundancy? What are the problems caused by the redundancy?	CO3	L1	6M
		OR			
6	a	Explain the following with suitable example: (i) Non- Loss decomposition. (ii) Prime Attributes.	CO3	L3	6M
	b	Illustrate redundancy and the problems that it can cause.	CO3	L2	6M

UNIT-IV

7	a	Discuss different phases (states) of transaction.	CO4	L2	6M
	b	Define Schedule. What is a serial schedule?	CO4	L1	6M
		OR			
8	a	What are the states of transaction?	CO4	L1	6M
	b	What are the two statements regarding transaction?	CO4	L1	6M

UNIT-V

9	a	Write short note on Buffer management for management of data.	CO5	L3	6M
	b	Explain in detail about ISAM.	CO5	L3	6M
		OR			
10	a	Explain different types of locks.	CO5	L2	6M
	b	Describe Times tamp based locking protocols.	CO5	L2	6M

***** END *****

O.P.Code: 19CS0550 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
RELATIONAL DATABASE MANAGEMENT SYSTEM
(Open Elective-I)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12** = **60** Marks)

		UNIT-I			
1	a	Explain about Views of data.	CO1	L2	6M
	b	Explain about various data models.	CO1	L1	6M
		OR			
2	a	Write a short note on ER model with an example.	CO1	L1	6M
	b	List out the Disadvantages of DBMS.	CO1	L1	6M
		UNIT-II			
3	a	Discuss about the use of renaming operator.	CO2	L6	6M
	b	Define Join. Explain different types of joins.	CO2	L2	6M
		OR			
4		Construct the ER diagram for a company needs to store information about employees (identified by ssn, with salary and phone as attributes), departments (identified by dno, with dname and budget as attributes), and children of employees (with name and age as attributes). Employees work in departments, each department is managed by an employee, a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company.	CO2	L6	12M
		UNIT-III			
5	a	Discuss about Nested queries with an example.	CO3	L1	6M
	b	Write a short note on Correlated Nested queries with an example.	CO3	L1	6M
		OR			
6	a	To solve: i. Write a query to find name and age of all sailors ii. Write a Query to find the name of sailors who have reserved a red boat iii. Write a query to find the name of sailors who have reserved at least one boat.	CO3	L6	6M
	b	Explain about Expression and string in Select command with an example.	CO3	L2	6M
		UNIT-IV			
7		Define normalization. List and Explain different normal forms with examples.	CO4	L2	12M
		OR			
8	a	Illustrate redundancy and the problems that it can cause.	CO4	L3	6M
	b	Explain about properties of decompositions.	CO4	L2	6M
		UNIT-V			
9	a	Discuss how do you recover from failure.	CO5	L6	6M
	b	Explain about the deadlock prevention schemes.	CO5	L2	6M
		OR			
10		Classify various levels of RAID with neat diagrams	CO5	L4	12M

***** END *****

O.P.Code: :19CS0549 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. II Year I Semester Supplementary Examinations October/November-2025

LINUX PROGRAMMING
(Open Elective-I)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Express vi Editor and explain its modes.	CO1	L2	6M
	b	Brief explain about the commands used in the vi Editor.	CO1	L2	6M

OR

2	a	What are the file types available in Unix? Discuss file operators with suitable examples?	CO1	L1	6M
	b	Illustrates about standard streams.	CO1	L3	6M

UNIT-II

3	a	Explain command substitution with example.	CO2	L2	6M
	b	Explain about Command Execution.	CO2	L2	6M

OR

4	a	Distinguish between a user-defined variable and predefined variable.	CO2	L2	6M
	b	Define a Variable and distinguish between a variable and value.	CO2	L2	6M

UNIT-III

5	a	How files with duplicate lines are handled in Unix?	CO3	L1	6M
	b	Write a shell program for counting characters, words and line.	CO3	L1	6M

OR

6		What information is presented when the following commands are entered? (i) cmp (ii) diff (iii) comm. (iv) cut (v) paste	CO3	L1	12M

UNIT-IV

7	a	What does a startup script consist of?	CO4	L1	6M
	b	write the basic script concepts orientes with Korn shell.	CO4	L1	6M

OR

8	a	Discuss about Korn Shell and its Features ?	CO4	L2	6M
	b	Explain about file contents and its directories.	CO4	L2	6M

UNIT-V

9	a	How argument validation is done in csh?	CO5	L1	6M
	b	How debugging scripts work in csh?	CO5	L1	6M

OR

10	a	Explain how the Environmental variables are handled.	CO5	L2	6M
	b	Explain how the on-off variable are handled.	CO5	L1	6M

*** END ***

O.P.Code: 19EC0448 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. II Year I Semester Supplementary Examinations October/November-2025

INTRODUCTION TO COMMUNICATION SYSTEMS
(Open Elective-I)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12** = **60** Marks)

		UNIT-I			
1	a	What is amplitude modulation express with mathematical equations?	CO1	L1	6M
	b	Describe the elements of communication systems.	CO1	L2	6M
		OR			
2	a	Explain the superheterudyne receiver (AM RECEIVER) with neat diagram.	CO1	L5	6M
	b	Discuss how to generate DSB-SC waves.	CO1	L6	6M
		UNIT-II			
3	a	Explain different types of Angle modulation techniques with mathematical equations.	CO2	L2	6M
	b	Compare PM & FM moduations.	CO2	L3	6M
		OR			
4		Write down about Wideband FM modulation.	CO2	L4	12M
		UNIT-III			
5		Write short notes on : i)Shot noise ii) Noise figure iii) SNR iv) Thermal noise v) White Noise	CO3	L3	12M
		OR			
6	a	Explain PAM with its mathematical analysis.	CO3	L2	6M
	b	What is the process of demodulation of PAM signals?	CO3	L2	6M
		UNIT-IV			
7	a	Write down about a receiver of a PCM with block diagram.	CO4	L3	6M
	b	Explain different types of Quantizer.	CO4	L2	6M
		OR			
8	a	What is delta modulation? Define it properly with diagram.	CO4	L1	6M
	b	Compare ASK, BPSK & BFSK.	CO4	L4	6M
		UNIT-V			
9	a	Explain TDMA.	CO5	L5	6M
	b	What is frequency reuse?	CO5	L1	6M
		OR			
10		Explain a structure of a mobile cellular system.	CO5	L2	12M

***** END *****

O.P.Code: 19HS0813	R19	H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
MANAGEMENT SCIENCE
(Open Elective-I)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1		Define and explain in the management and its various functions.	CO1	L1	12M
		OR			
2	a	Briefly explain the Weber 's Ideal Bureaucracy.	CO1	L2	6M
	b	Examine the Span of control.	CO1	L4	6M

UNIT-II

3		Discuss and Explain the various types plant layout with suitable examples.	CO2	L2	12M
		OR			
4	a	Write short notes on Marketing Mix.	CO2	L1	6M
	b	Outline the Types of advertising.	CO2	L3	6M

UNIT-III

5		Define training? Explain the types of the job training methods.	CO3	L1	12M
		OR			
6	a	Discuss the wage and salary administration.	CO3	L2	6M
	b	Describe the Job analysis.	CO3	L2	6M

UNIT-IV

7		Examine the concept of corporate planning. Discuss the essential steps in corporate planning through a flow chart.	CO4	L4	12M
		OR			
8	a	Define PERT and importance in Network analysis	CO4	L2	6M
	b	Explain the nature of Project cost and its types	CO4	L1	6M

UNIT-V

9	a	Discuss Management Information System (MIS) and How it works in an organization.	CO5	L2	6M
	b	State the needs for Supply Chain Management and its potential benefits.	CO5	L3	6M
		OR			
10	a	Elucidate the importance of Six Sigma in production.	CO5	L4	6M
	b	How is Bench Marking useful?	CO5	L3	6M

*** END ***

O.P.Code:19EE0240	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 60**

***Note:** Answer **PART-A** from pages **2 to 20** and **PART-B** from **21 to 39.**

(Answer all Six Units **6 X 10 = 60** Marks)

PART-A

UNIT-I

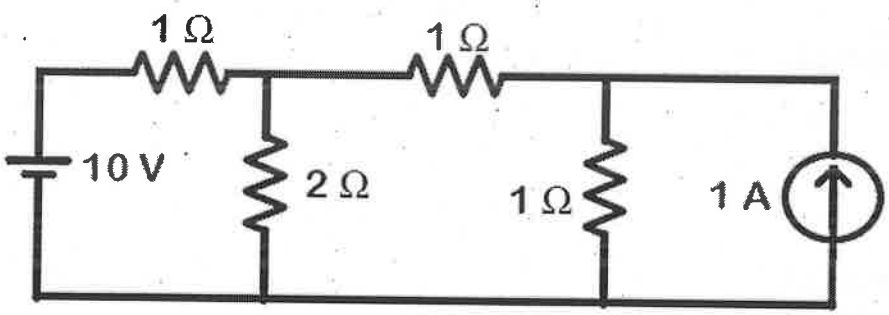
1	a	State and explain Ohm's law.	CO1	L1	5M
	b	Explain in detail about passive elements.	CO1	L1	5M

OR

2		Define : (i) RMS value (ii) average value (iii) form factor (iv) peak factor (v) Prove that the form factor of the sinusoidal wave is 1.11	CO1	L2	10M

UNIT-II

3		State Super position theorem	CO2	L1	2M
		Calculate the current in 2Ω resistor in the given circuit using super position theorem.	CO2	L3	8M



OR

4	a	Explain in detail about Impedance parameters.	CO2	L2	5M
	b	Briefly discuss about Admittance parameters.	CO2	L2	5M

UNIT-III

5	a	Derive Torque equation of dc motor.	CO3	L3	5M
	b	Explain about constructional details of dc motor.	CO3	L2	5M

OR

6	a	Derive the condition for maximum efficiency of the transformer.	CO3	L3	5M
	b	Discuss about the voltage regulation of the transformer.	CO3	L3	5M

PART-B

UNIT-IV

7	a	What is Doping? Describe P-and N-type semiconductors.	CO5	L2	5M
	b	Explain the behavior of PN junction diode.	CO5	L2	5M

OR

8	a	Draw the circuit diagram of a Bridge Rectifier and explain its operation with input and output waveforms.	CO5	L3	5M
	b	Discuss the operation of full wave rectifier with capacitor filter.	CO5	L2	5M

UNIT-V

9	a	Describe in detail the working of an NPN bipolar junction transistor. Why is it called Bipolar?	CO4	L2	4M
	b	Explain with the help of diagrams various types of circuit configurations, which can be obtained from a bipolar junction transistor.	CO6	L3	6M

OR

10	a	Write the application of a transistor and explain the transistor acts a switch.	CO5	L2	5M
	b	Explain in detail the transistor working as a amplifier.	CO5	L2	5M

UNIT-VI

11	a	Explain about the JFET and draw the construction of JFET(P Channel).	CO6	L3	5M
	b	Explain the operation of JFET(P Channel).	CO5	L3	5M

OR

12	a	Explain the static characteristics of MOSFET and draw its characteristics.	CO6	L3	6M
	b	Write the application of MOSFET.	CO5	L1	4M

***** END *****

O.P.Code: 19EE0202	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year I Semester Supplementary Examinations October/November-2025

ELECTRICAL CIRCUITS - II

(Electrical & Electronics Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12** = 60 Marks)

UNIT-I

1	a	Derive the relationship between Phase and Line voltages, currents in star connected load.	CO4	L3	6M
	b	An unbalanced 4 wire star connected load has a balanced voltage of 400V. The load are Z1=(4+j8) Ω ,Z2=(5+j4)Ω ,Z3=(15+j20)Ω .Calculate line currents , current in neutral wire, total power.	CO4	L4	6M

OR

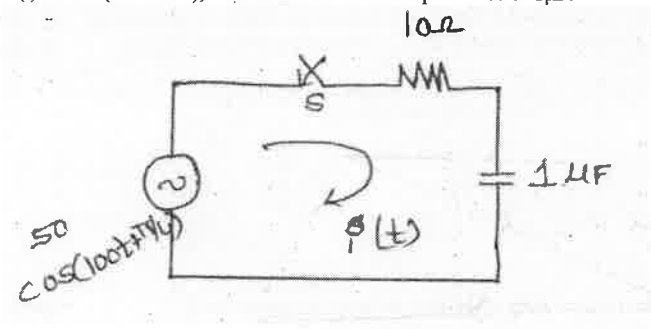
2	a	A balanced delta connected load of (4+j3) Ω per phase is connected to a balanced 3¢ 440v supply. Find i) active power ii) reactive power iii) Apparent power.	CO1	L3	6M
	b	A 400V,3¢ supply feeds an unbalanced 3 wire star connected load. The branch impedances of the load are ZR=(4+j8)Ω ,ZY=(3+j4)Ω ,ZB=(5+j20)Ω. Find the line currents and voltages across phase impedance. Assume RYB phase sequence.	CO4	L4	6M

UNIT-II

3	a	Derive the transient response of an RL circuit with dc excitation.	CO2	L4	6M
	b	A series RL circuit with R=30Ω and L=15H has a constant voltage V=60V applied at t=0. Determine the current I, the voltage across the resistor and across the inductor.	CO2	L3	6M

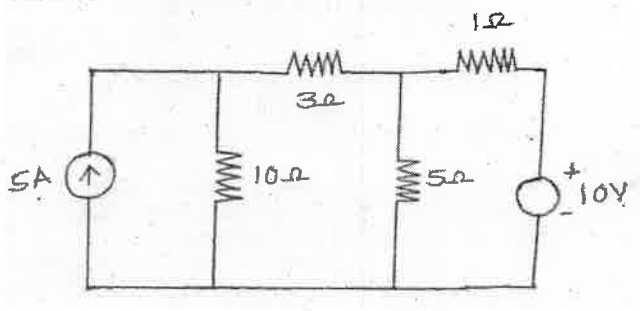
OR

4		In the circuit shown in fig. Determine the complete solution for the current when switch is closed at t=0,applied voltage is V(t)=50cos(102t+π/4),resistance R=10Ωand capacitance c=1μF.	CO2	L3	12M



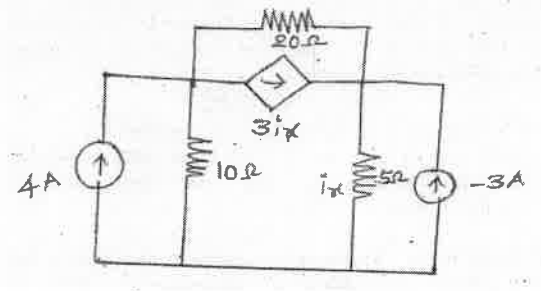
UNIT-III

5	Determine current in 10Ω resistor for the following network by using nodal analysis	CO3	L4	12M



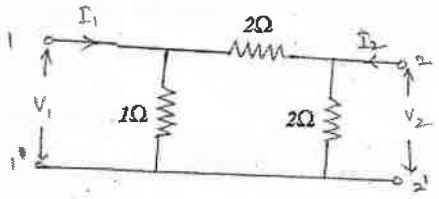
OR

6	Determine ix for the following network	CO3	L5	12M



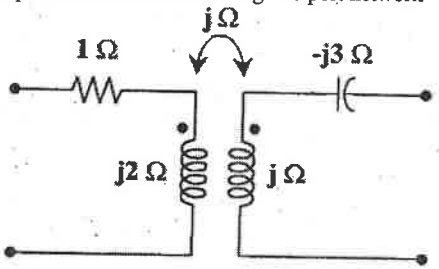
UNIT-IV

7	a	Derive the expressions for Z-parameters in terms of ABCD parameters	CO5	L3	6M
	b	Find the Z - parameters for the resistance network shown in figure	CO5	L2	6M



OR

8	Obtain the T parameters of the following two port network	CO5	L5	12M

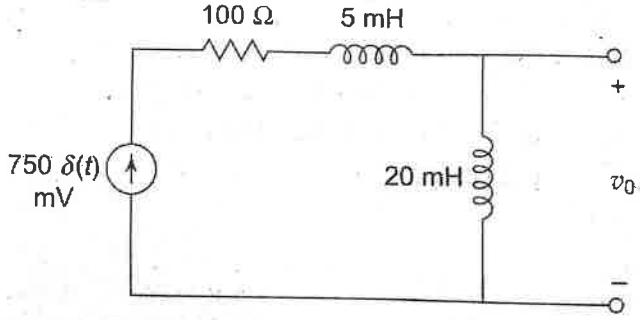


UNIT-V

9	a	Define Laplace transform of a function.	CO6	L1	6M
	b	Derive Laplace transform of all standard signals.	CO6	L3	6M

OR

10	There is no energy stored in the circuit shown in at the time the impulse voltage is applied. Find (t) for t.	CO6	L3	12M



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O.P.Code: 19EC0402	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year I Semester Supplementary Examinations October/November-2025
ELECTRONIC DEVICES AND CIRCUITS
(Electronics & Communications Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Define cut in voltage of a PN Junction diode and give its values for Si and Ge diodes.	CO1	L1	4M
	b	A p-n junction germanium diode has a reverse saturation current of 0.10 μA at the room temperature of 27^0C. It is observed to be 30μA, when the room temperature is increased. Calculate the new room temperature. Also determine the current passing through the diode at this new temperature.	CO4	L5	8M

OR

2	a	Define Breakdown voltage and give the circuit symbol for Zener Diode.	CO1	L1	6M
	b	What is a Clamper circuit? Describe about positive and negative clampers with neat circuit diagrams.	CO5	L1	6M

UNIT-II

3	a	With neat circuit diagram and waveforms, illustrate the construction and working of Bridge rectifier.	CO1	L2	5M
	b	A 5KΩ load is fed from a bridge rectifier connected across a transformer secondary whose primary is connected to 460V, 50 Hz supply. The ratio of number of primary turns to secondary turns is 2:1.Estimate dc load current, ripple voltage and PIV rating of diode.	CO4	L5	7M

OR

4	a	Explain dynamic scattering LCD and field effect LCD working with neat diagrams.	CO3	L1	7M
	b	Explain the principle involved in working of Varactor diode and sketch its characteristics.	CO5	L2	5M

UNIT-III

5	a	Explain the operation of NPN transistor with neat diagram.	CO1	L2	7M
	b	With neat diagram, Interpret the Input and Output characteristics of a BJT in CB Configuration.	CO5	L2	5M

OR

6		Explain the construction and working principle of N-channel JFET.	CO1	L2	12M

UNIT-IV

7	a	Explain the concept of DC and AC Load lines and discuss the criteria for fixing the Q-point.	CO3	L2	7M
	b	List the different types of Biasing a Transistor and explain the Fixed Bias of a Transistor	CO6	L4	5M

OR

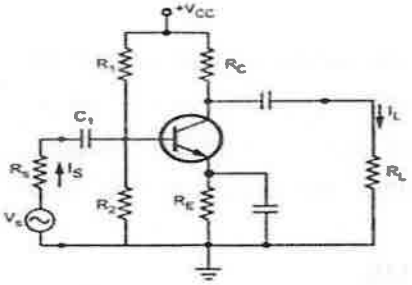
8		Estimate the stability factors S, S′ and S″ of a BJT Voltage Divider bias.	CO6	L5	12M

UNIT-V

9	a	Why hybrid model is used for the analysis of BJT amplifier at low frequencies? Draw the hybrid model for CE transistor and derive the hybrid parameters.	CO1	L1	8M
	b	Discuss about the frequency response of an amplifier.	CO1	L6	4M

OR

10		Consider a single stage CE amplifier with R_s = 1kΩ, R_1 = 50kΩ, R_2 = 2kΩ, R_c = 1kΩ, R_L = 1.2kΩ, h_{fe}=50, h_{ie}=1.1k, h_{oe} = 25μA/V and h_{re} =	CO2	L3	12M



2.5×10^{-4}, as shown in Fig.Solve A_I, R_i, A_v, A_{vs}, A_{IS} and R_0.

***** END *****