O.P.Code: 19CS0523 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations May-2025
BIG DATA ANALYTICS
(CSE)

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

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

UNIT-I

1		Discuss in detail about History of Hadoop.	CO1	L2	12M
		OR			
2	a	What is big data analytics? Identify the Classification of Analytics.	CO1	L3	6M
	b	Illustrate in detail about Hadoop streaming.	CO2	L2	6M

UNIT-II

3		Illustrate the HDFS concepts.	CO2	L3	12M
		OR			
4		Explain the block, name node and data node in Hadoop file system.	CO3	L2	12M

UNIT-III

5		Examine the Anatomy of a MapReduce Job Run.	CO4	L4	12M
		OR			
6	a	What are the different types of failures in Classic MapReduce.	CO1	L1	6M
	b	What are the different types of failures in YARN.	CO1	L1	6M

UNIT-IV

7	a	Illustrate the concept of grunt.	CO2	L3	6M
	b	Why Do We Need Apache Pig? Identify the features of PIG.	CO2	L4	6M
		OR			
8		What is Pig? How to Install and execute PIG on Hadoop Cluster.	CO5	L2	12M

UNIT-V

9		Illustrate Hive table with example.	CO3	L5	12M
		OR			
10	a	Draw a neat sketch of Hive architecture.	CO2	L3	6M
	b	Explain about components of Hive architecture.	CO2	L2	6M

***** END *****

O.P.Code: 19CS0551	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations May-2025
JAVA PROGRAMMING
(Open Elective-II)

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

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

UNIT-I

1	a	Summarize Java Buzz Words.	CO1	L1	6M
	b	Write a Java program to use Bit-wise operators.	CO1	L2	6M
		OR			
2	a	Write a Java program to read and display the array elements in order.	CO1	L2	6M
	b	Illustrate the Iteration Statements with example.	CO1	L3	6M

UNIT-II

3	a	Discuss about the super keyword in java with example.	CO2	L2	6M
	b	What is an abstract class? Explain all the cases to implement abstract class.	CO3	L2	6M
		OR			
4	a	Define Class, Method and Object? Show the syntax to define these in java.	CO2	L1	6M
	b	Recall what is package? Explain how to create user defined package in java with example.	CO3	L3	6M

UNIT-III

5	a	Explain about try, catch, statements with examples.	CO4	L3	6M
	b	Contrast in detail about throw and throws statements with examples.	CO4	L3	6M
		OR			
6	a	Explain about creating your own Exception clauses.	CO4	L2	6M
	b	Show the use of finally statements with examples.	CO4	L3	6M

UNIT-IV

7	a	Create a java program to sort the given names into ascending order.	CO5	L4	6M
	b	Write a java program to create two threads and execute simultaneously.	CO5	L4	6M
		OR			
8	a	Write the difference between String and StringBuffer classes.	CO5	L3	6M
	b	Explain about Thread Life Cycle.	CO5	L2	6M

UNIT-V

9	a	Explain about layout managers.	CO6	L3	6M
	b	Exaplin General form of Generic class and Generic Interfaces.	CO6	L4	6M
		OR			
10	a	Discuss about Collection interfaces.	CO6	L4	6M
	b	Write a java program to handle Mouse Events.	CO6	L5	6M

*** END ***

O.P.Code: 19CI0601	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations May-2025
PRINCIPLES OF OPERATING SYSTEMS
(Computer Science & Information Technology)

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

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

UNIT-I

1	Demonstrate evolution of Operating System in detail.	CO1	L3	12M
	OR			
2	Compare between Operating System Protection and Operating System Security.	CO1	L4	12M

UNIT-II

3	What is multithreading? Explain the thread libraries in detail.	CO2	L2	12M
	OR			
4	Demonstrate Operating System Scheduling-Criteria in detail.	CO2	L3	12M

UNIT-III

5	Define Semaphores. List Classical problems of synchronization.	CO3	L1	12M
	OR			
6	Discuss in detail System Model.	CO3	L6	12M

UNIT-IV

7	Explain in detail about Management-Swapping.	CO4	L2	12M
	OR			
8	Discuss in detail about paging in operating system.	CO4	L6	12M

UNIT-V

9	Examine about RAID structure and stable-storage implementation.	CO5	L5	12M
	OR			
10	Explain in detail File System Structure and File System Implementation.	CO5	L2	12M

***** END *****

O.P.Code: 19CS0510	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year II Semester Supplementary Examinations May-2025

OBJECT ORIENTED PROGRAMMING THROUGH JAVA

(Common to CSE & CSIT)

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

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

		UNIT-I			
1	a	Explain History and Evolution of Java.	CO1	L2	4M
	b	List and Explain Java Buzz Words.	CO1	L2	8M
		OR			
2	a	Explain Java security, and Illustrate the Portability.	CO1	L3	6M
	b	Explain the Structure of Java? Explain type of programs in Java.	CO1	L2	6M
		UNIT-II			
3	a	Discuss about the static, final keywords with an example.	CO2	L3	6M
	b	Write a java program to illustrate Constructor Overloading.	CO2	L2	6M
		OR			
4		What is an abstract class? Explain all the cases to implement abstract class.	CO2	L3	12M
		UNIT-III			
5	a	What is Multithreading? Illustrate the ways to create multiple threads in java.	CO3	L2	6M
	b	Explain about Thread Life Cycle.	CO3	L3	6M
		OR			
6	a	What is a String? Explain different String declarations with an example.	CO3	L2	6M
	b	Write a java program to check the given string is palindrome or not.	CO3	L3	6M
		UNIT-IV			
7	a	How to create a file in java with example.	CO4	L3	6M
	b	How to Write and Read a file in java with an example.	CO4	L3	6M
		OR			
8		Write a program illustrating following framework. i) Array List ii) Vector iii) Hash Table iv) Stack	CO4	L2	12M
		UNIT-V			
9		List out the steps for creating simple user Registration form using java swing with an example.	CO5	L3	12M
		OR			
10	a	Explain java date and Time with an example.	CO5	L2	8M
	b	Illustrate the operations on Streams.	CO5	L3	4M

***** END *****

O.P.Code: 19CS0501	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Supplementary Examinations May-2025
PYTHON PROGRAMMING
(CIVIL,EEE,ME,AGE)

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

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

UNIT-I

1		Explain about the input and output statements or methods with example.	CO1	L1	12M
		OR			
2	a	What is data type? List out the types of data types with example.	CO1	L1	6M
	b	Explain variable assignment with suitable example.	CO2	L1	6M

UNIT-II

3		List various types of operators in Python and write any 4 types of operators	CO1	L2	12M
		OR			
4	a	Write a python program to print factorial of a given number	CO2	L3	6M
	b	Implement Python program to find sum of natural numbers.	CO2	L5	6M

UNIT-III

5	a	Compare class and object with python code	CO2	L5	6M
	b	Narrate scope of a variable in a function	CO3	L2	6M
		OR			
6		What is inheritance? Illustrate types of inheritance with python code	CO3	L1	12M

UNIT-IV

7	a	Explain in details about namespaces and scoping.	CO4	L5	6M
	b	Explain about the import statement in modules.	CO4	L5	6M
		OR			
8	a	Describe the any one regular expression	CO5	L4	6M
	b	Explain package installation via pip	CO4	L5	6M

UNIT-V

9	a	Explain about command line arguments	CO3	L5	6M
	b	Explain about reading and writing files in python	CO5	L5	6M
		OR			
10		Explain about Mathematics function in python	CO4	L5	12M

***** END *****

O.P.Code: 19CE0147 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. III Year II Semester Supplementary Examinations May-2025
PROJECT PLANNING AND CONTROL
(Open Elective-IV)

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

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

UNIT-I

1		Describe various phases involved in project management and also Explain it in brief.	CO1	L2	12M
		OR			
2	a	Explain why planning is necessary in project management.	CO1	L1	6M
	b	Describe various steps for planning a project.	CO1	L1	6M

UNIT-II

3		Discuss about the steps in development of network.	CO2	L2	12M
		OR			
4	a	What are common practical situation in network and how it represents?	CO2	L1	6M
	b	Explain how will you give numbering the events.	CO2	L1	6M

UNIT-III

5	a	Define PERT? What are the uses of PERT.	CO3	L1	4M
	b	What are the different types of time estimates involved in PERT? Explain in detail.	CO3	L2	8M
		OR			
6		Explain in detail about β- Distribution curve and expected duration.	CO3	L2	12M

UNIT-IV

7		What is CPM Network analysis ? Explain in detail.	CO4	L2	12M
		OR			
8		Explain the tabular form of doing computations for CPM network elements.	CO4	L2	12M

UNIT-V

9		What do you understand by updating? Why is it essential?	CO6	L2	12M
		OR			
10		Explain about Resources usage profiles histograms.	CO5	L2	12M

*** END ***

O.P.Code: 19HS0862 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations May – 2025
STRATEGIC MANAGEMENT
(Open Elective-IV)

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

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

UNIT-I

1		Define strategic management. Explain in detail about the components of strategic management process.	CO1	L3	12M

OR

2		Explain with example the terms Mission, the Vision, and the Strategic Intent Statements. Why and when is there likely to be conflict between them?	CO1	L4	12M

UNIT-II

3		Strategic analysis and choice is very important before closing down any unit. Do you agree? Explain with the help of BCG Matrix and GE nine cell matrixes.	CO2	L4	12M

OR

4		How McKinsey's 7S framework is useful in strategic management?	CO2	L2	12M

UNIT-III

5		Explain about retrenchment strategy and combination strategy used in an organization for profit maximization of a company.	CO3	L3	12M

OR

6	a	In which situation retrenchment strategy is used?	CO3	L1	6M
	b	What is an example of a corporate growth strategy?	CO3	L1	6M

UNIT-IV

7		"Resource Allocation is a vital part of strategy" why this is vital?	CO4	L3	12M

OR

8		What is strategic leadership? Who is strategic leader?	CO4	L1	12M

UNIT-V

9		What are the steps involved in strategic control?	CO6	L1	12M

OR

10		Define strategic audit. What are the types of strategic audit?	CO6	L2	12M

***** END *****

Q.P.Code: 19CE0143 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations May-2025
FUNDAMENTALS OF URBAN PLANNING
(Open Elective-II)

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

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

UNIT-I

1	a	Give a details account on objects of town planning.	CO1	L1	8M
	b	Explain in detail on how town are originated.	CO1	L1	4M

OR

2		With the help of neat sketch, discuss the features of concentric spread, ribbon development scattered development and Satellite Township.	CO1	L2	12M

UNIT-II

3	a	Describe Territorial survey and Vital Survey.	CO2	L2	8M
	b	Define and explain zoning.	CO2	L1	4M

OR

4	a	What is a preliminary survey? What are the usual topics covered in it?	CO2	L1	6M
	b	What are the advantages of Zoning?	CO2	L1	6M

UNIT-III

5		Explain in detail about the classification of residential buildings.	CO3	L2	12M

OR

6		What do you mean by "skyscrapers"? Explain in detail about the argument for and against them.	CO3	L2	12M

UNIT-IV

7		Discuss the factors to be examined at the time of site selection for public Buildings.	CO4	L2	12M

OR

8		Explain the principles of design of public buildings.	CO4	L2	12M

UNIT-V

9		With neat sketches explain various types of street systems.	CO5	L2	12M

OR

10		Discuss in detail about the advantages & disadvantages of traffic signals.	CO5	L2	12M

*** END ***

O.P.Code: 19EE0239	R19	H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Supplementary Examinations May-2025
BASIC ELECTRICAL ENGINEERING
(Elecronics & Communication Engineering)

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

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

UNIT-I

1	a	State and explain Kirchhoff's laws?	CO1	L1	6M
	b	State and explain Thevenin's theorem.	CO1	L2	6M
		OR			
2	a	State and Prove Maximum Power Transfer Theorem	CO1	L1	6M
	b	Determine the Equivalent Resistance when the resistors are connected in Series & Parallel.	CO1	L2	6M

UNIT-II

3	a	Derive an expression for RMS values of sine wave form.	CO2	L3	6M
	b	Derive the voltage and current relations in three phase balanced circuits for delta connection.	CO2	L3	6M
		OR			
4		Derive an expression for the current and impedance for a series RL and RC circuit excited by a Sinusoidally alternating voltage. Draw the phasor diagrams.	CO2	L3	12M

UNIT-III

5		Explain the Constructional details of D.C machine with neat sketch.	CO3	L2	12M
		OR			
6		Explain the working operation of a D.C Motor in detail	CO3	L5	12M

UNIT-IV

7		Draw the constructional diagram of a single –phase transformer and explain all the parts.	CO4	L4	12M
		OR			
8		Explain Working Principle of Induction Motor in detail.	CO4	L5	12M

UNIT-V

9	a	Define Wiring system &List the types of wiring systems.	CO5	L1	6M
	b	What is the Importance of wiring system.	CO5	L1	6M
		OR			
10		Compare Fuse & Circuit breaker based on various aspects.	CO5	L3	12M

***** END *****

Q.P.Code: 19HS0831 | R19 | H.T.No. | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations May-2025

DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS

(CE, AGE, EEE,ME & ECE)

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

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

UNIT-I

1	a	Solve $(y^2 - 2xy)dx + (2xy - x^2)dy = 0.$	CO1	L1	6M
	b	Solve $\left(x\frac{dx}{xy} + y\right) = logx.$	CO1	L2	6M

OR

2	a	Solve $(D^2 - 4D + 3)y = 4e^{3x}$ given; $y(0) = -1, y^1(0) = 3.$	CO1	L3	6M
	b	Solve $(D^2 + 1)y = sinx.sin2x.$	CO1	L2	6M

UNIT-II

3	a	Solve $\frac{d^2y}{dx^2} + \frac{1}{x}\frac{dy}{dx} = \frac{12logx}{x^2}.$	CO2	L1	6M
	b	Solve $(D^2 + a^2)y = tanax$ by method of variation of parameters.	CO2	L3	6M

OR

4		Find the current 'i' in the LCR circuit assuming zero initial current and charge i. If R=80 ohms, L=20 henrys, C=0.01 farads and E=100 V.	CO2	L3	12M

UNIT-III

5	a	Form the Partial Differential Equation by eliminating the constants from$\log(az - 1) = x + ay + b.$	CO3	L1	6M
	b	Solve $p(1 + q) = qz.$	CO3	L2	6M

OR

6	a	Form the P.D.E by eliminating the arbitrary function from $\emptyset\left(\frac{y}{x}, x^2 + y^2 + z^2\right) = 0.$	CO3	L3	6M
	b	Solve by the method of separation of variables $u_x - 4u_y = 0,$ where $u(0, y) = 8e^{-3y}.$	CO3	L3	6M

UNIT-IV

7	a	Find the divergence of $\bar{f} = (xyz)\vec{i} + (3x^2y)\vec{j} + (xz^2 - y^2z)\vec{k}.$	CO4	L1	6M
	b	Show that $\bar{f} = (x + 3y)\vec{i} + (y - 2z)\vec{j} + (x - 2z)\vec{k}$ is solenoidal.	CO4	L2	6M

OR

8	a	Prove that $div(curl\ \bar{f}) = 0.$	CO4	L2	6M
	b	Prove that $\nabla.(\bar{f} \times \bar{g}) = \bar{g}.(\nabla \times \bar{f}) - \bar{f}(\nabla \times \bar{g}).$	CO4	L3	6M

UNIT-V

9	a	State Gauss's divergence theorem.	CO5	L1	2M
	b	By transforming into triple integral, Evaluate $\iint_s x^3dydz + x^2ydzdx + x^2zdxdy$ where 's' is the closed surface consisting of the cylinder $x^2 + y^2 = a^2$ and the circular discs $z=0; z=b.$	CO5	L1	10M

OR

10		Verify Stoke's theorem for$\bar{F} = (x^2 + y^2)\vec{i} - 2xy\vec{j}$ taken round the rectangle bounded by the lines$x = \pm a, y = \pm b.$	CO5	L3	12M

*** END ***

O.P.Code: 19CS0524	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. III Year II Semester Supplementary Examinations May-2025
COMPUTER NETWORKS
(Common CSE & CSIT)

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

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

UNIT-I

1		Explain in detail about TCP/IP Network model.	CO1	L2	12M
		OR			
2	a	Write notes bon unguided media.	CO1	L4	6M
	b	Briefly explain about different unguided media	CO1	L2	6M

UNIT-II

3	a	What is framing? Explain with frame architecture.	CO2	L5	6M
	b	Describe flow control in data link layer.	CO2	L2	6M
		OR			
4		Discuss HDLC Protocol with the elaborative explanation of its frames	CO2	L2	12M

UNIT-III

5		List and explain congestion control algorithms in network layer.	CO3	L1	12M
		OR			
6	a	Explain about quality of service in network layer.	CO3	L2	6M
	b	Describe the term internetworking in network layer.	CO3	L2	6M

UNIT-IV

7	a	List the transport service primitives.	CO4	L1	6M
	b	List and define the elements of transport layer.	CO4	L1	6M
		OR			
8		Explain the TCP protocol with neat sketch.	CO4	L2	12M

UNIT-V

9	a	Write short notes on application layer.	CO5	L4	6M
	b	Justify WWW in application layer.	CO5	L6	6M
		OR			
10		Discuss about File Transfer Protocol with neat diagram.	CO5	L2	12M

***** END *****

O.P.Code: 19EC0420	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations May-2025
DIGITAL SIGNAL PROCESSING
(ECE)

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

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

UNIT-I

1	a	Explain Decimation in Time FFT algorithm with necessary expressions.	CO1	L1	6M
	b	Compare Radix-2 DIT-FFT and DIF-FFT algorithms.	CO1	L2	6M
		OR			
2	a	Compute the DFT of a sequence $x(n) = \{1,1,0,0\}$.	CO1	L4	6M
	b	Find the IDFT of a sequence $Y(K) = \{1,0,1,0\}$.	CO1	L3	6M

UNIT-II

3	a	Explain the different types of IIR filter realization with suitable example.	CO2	L2	6M
	b	Apply Bilinear transformation to $(s) = \frac{2}{(s+2)(s+2)}$, Determine H(Z).	CO2	L5	6M
		OR			
4	a	Construct the parallel form structure of the system with difference equation $y(n) = -0.1y(n-1) + 0.72y(n-2) + 0.7x(n) - 0.252\,x(n-2)$	CO2	L3	6M
	b	Describe impulse invariant method of designing IIR filter.	CO2	L2	6M

UNIT-III

5	a	Explain briefly how zeros are located in FIR Filter.	CO3	L2	6M
	b	List the desirable characteristics of the window.	CO3	L2	6M
		OR			
6	a	Determine the Direct form realization of system function $H(z) = 1 + 2z^{-1} - 3z^{-2} - 4z^{-3} + 5z^{-4}$	CO3	L4	6M
	b	Construct the cascade realization of FIR Filters for the function $H(z) = (1 + 2z^{-1} - z^{-2})(1 + z^{-1} - z^{-2})$	CO3	L5	6M

UNIT-IV

7		The output signal of an A/D converter is passed through a first order low pass filter with transfer function $H(z) = \frac{(1-a)}{(z-a)}$ $for\ 0 < a < 1$. Find the steady state output noise power due to quantization at the output of the digital filter.	CO4	L5	12M
		OR			
8	a	Discuss the various common methods of quantization.	CO4	L2	6M
	b	Explain in detail the effects of input quantization error.	CO4	L2	6M

UNIT-V

9	a	Draw and explain the architecture of von Neumann.	CO5	L4	6M
	b	Discuss the various Circular Buffer Registers in detail.	CO5	L2	6M
		OR			
10	a	Explain the function of CALU in detail.	CO5	L3	6M
	b	Explain in detail the application of PDSP's in the field of communication systems.	CO5	L2	6M

*** END ***

O.P.Code: 19EC0410	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year II Semester Supplementary Examinations May-2025

ELECTROMAGNETIC THEORY AND TRANSMISSION LINES

(Electronics and Communications Engineering)

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

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

		UNIT-I			
1	a	Define Electric Potential. Find the electric potential for a point charge is located at origin.	CO1	L1	8M
	b	Determine the Relationship between E and V.	CO1	L5	4M
		OR			
2	a	Evaluate the two Maxwell's equations for electrostatic fields and state them.	CO 1	L5	6M
	b	List Maxwell equations for electrostatic fields in integral form.	CO 1	L1	6M
		UNIT-II			
3	a	Determine Maxwell's Equations for Magnetostatic Field.	CO 2	L5	6M
	b	Determine the Magnetic Flux Density due to Infinite Sheet of Current.	CO 2	L5	6M
		OR			
4	a	Explain Ampere's Circuit Law.	CO 3	L2	6M
	b	Determine the Magnetic Field Intensity due to a Infinite Sheet of Current.	CO 2	L5	6M
		UNIT-III			
5		Explain the following i) Faraday's law ii) Inconsistency of Ampere's law.	CO1	L2	12M
		OR			
6	a	Determine the Expressions for inconsistency of Ampere's law.	CO3	L5	9M
	b	Why ampere's Law is In-consistent.	CO1	L1	3M
		UNIT-IV			
7		Discuss about pointing theorem and poynting vector.	CO4	L6	12M
		OR			
8	a	Evaluate the wave equation in lossy dielectric medium for sinusoidal time variations.	CO5	L5	6M
	b	In lossless medium $\eta = 40\pi$, $\mu_r = 1$, $H=2\cos(\omega t-z)\hat{a}_x + 5\sin(\omega t-z)\hat{a}_y$. Find ε_r, ω and E for the medium.	CO4	L3	6M
		UNIT-V			
9	a	Explain about the smith chart for finding the SWR and Reflection coefficient.	CO6	L2	8M
	b	List out the applications of smith chart?	CO6	L1	4M
		OR			
10	a	With neat sketch explain about Primary and Secondary constants of transmission line.	CO6	L2	6M
	b	A low loss transmission line of 100 Ω characteristics impedance is connected to a load of 200 Ω. Calculate the voltage reflection coefficient and the standing wave ratio.	CO6	L3	6M

***** END *****

O.P.Code: 19EC0401	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year II Semester Supplementary Examinations May-2025
SWITCHING THEORY AND LOGIC DESIGN
(Electronics & Communications Engineering)

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

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

UNIT-I

1	a	Convert the following to Decimal and then to Octal. (i) (42341)6 (ii) (10010011)2	CO1	L1	6M
	b	State Duality theorem. List Boolean laws and their Duals.	CO1	L2	6M
		OR			
2		Convert the following to gray code and then to binary. (i) $(1111)_{16}$ (ii) $(164)_{10}$ (iii) $(237)_8$	CO1	L3	12M

UNIT-II

3	a	Simplify the following Boolean expressions using K-map F(W,X,Y,Z)= XZ+W'XY'+WXY+W'YZ+WY'Z	CO2	L3	6M
	b	Implement the following Boolean equation using only NAND gates Y=AB+CDE+F.	CO2	L2	6M
		OR			
4		Minimize the given Boolean function F(A,B,C,D) = Σ m(0,1,2,3,6,7,13,15) using tabulation method and implement using basic gates	CO2	L3	12M

UNIT-III

5	a	Design the full adder using half adders	CO3	L2	6M
	b	Implement the following Boolean function using 8:1 multiplexer. F(A,B,C,D) = A'BD'+ACD+B'CD+A'C'D	CO3	L3	6M
		OR			
6	a	What is priority encoder? Mention its operation	CO3	L2	6M
	b	Implement a 2-bit Magnitude comparator and write down its design procedure.	CO3	L3	6M

UNIT-IV

7	a	Draw the circuit of JK flip flop using NAND gates and explain its operation.	CO4	L3	6M
	b	Write the differences between combinational and sequential circuits.	CO4	L2	6M
		OR			
8		With a neat sketch explain MOD 6 Johnson counter using D Flip Flop.	CO4	L2	12M

UNIT-V

9		Implement the following Boolean function usingPLA (i)F1= Σm(0,1,2,3,4,8,11,13) (ii)F2 = Σm(0,1,,3,8,10,12,14).	CO5	L4	12M
		OR			
10		Give the logic implementation of a 32x4 bit ROM using a decoder of a suitable figure.	CO5	L2	12M

***** END *****

O.P.Code: 19CS0522	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations May-2025
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
(CSE & CSIT)

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

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

		UNIT-I			
1	a	Illustrate various characteristics of Intelligent agents.	CO1	L1	6M
	b	Explain Foundations of Artificial Intelligence.	CO1	L2	6M
		OR			
2	a	Tabulate comparison of Human Intelligence with Artificial Intelligence.	CO1	L4	6M
	b	Discuss about agents and various Properties of environment.	CO1	L2	6M
		UNIT-II			
3	a	Identify and explain in detail about optimization problems.	CO2	L2	6M
	b	Demonstrate the process of simulated annealing with example.	CO2	L3	6M
		OR			
4	a	Analyze Depth Limited search and Bidirectional search techniques with suitable examples.	CO2	L4	6M
	b	Describe the process of simulated annealing with example.	CO2	L2	6M
		UNIT-III			
5	a	Explain the various types of Machine Learning techniques.	CO3	L2	6M
	b	List out an applications of Machine Learning.	CO3	L1	6M
		OR			
6	a	Explain about Decision Trees in supervised learning.	CO3	L2	6M
	b	Compare Univariate and Multivariate Decision Trees.	CO3	L4	6M
		UNIT-IV			
7	a	Illustrate the Principle Component Analysis technique.	CO4	L3	6M
	b	How mixture density is calculated in unsupervised learning?	CO4	L1	6M
		OR			
8	a	Implement for the finite words classification system using back propagation algorithm.	CO4	L4	6M
	b	Explain the procedure for choose the number of clusters in USL.	CO4	L2	6M
		UNIT-V			
9	a	Explain the following terms i. Reinforcement learning ii. Density Estimation	CO5	L2	6M
	b	Compare unsupervised learning and Reinforcement learning.	CO5	L4	6M
		OR			
10	a	Analyze the K-Nearest Neighbor Estimator.	CO5	L4	6M
	b	Elaborate Non Parametric Classification.	CO5	L6	6M

***** END *****

O.P.Code: 19CS0525	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.TechIII Year II Semester Supplementary Examinations May-2025
WEB TECHNOLOGIES
(CSIT)

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

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

UNIT-I

1	a	Discuss in detail about Multimedia with an example.	CO1	L6	6M
	b	Explain Working with Images with example.	CO1	L2	6M
		OR			
2	a	Determine the features of cascading style sheets.	CO1	L6	4M
	b	Discuss in detail about backgrounds in CSS.	CO1	L6	8M

UNIT-II

3		Write a JavaScript validation for creating registration form.	CO2	L1	12M
		OR			
4	a	Develop a program using onclick Event in JavaScript.	CO2	L6	6M
	b	Write a JavaScript program for Fibonacci series	CO2	L6	6M

UNIT-III

5	a	Explain about HTTP servlet Request	CO3	L1	6M
	b	Discuss about HTTP servlet Response with syntax.	CO3	L1	6M
		OR			
6		Write a Java servlet program to change the Background color of the page by the color selected by the user from the list box.	CO3	L6	12M

UNIT-IV

7	a	Explain Regular expressions in PHP with an example.	CO4	L3	6M
	b	Discuss XML Namespaces.	CO4	L6	6M
		OR			
8		Write a Java servlet Program to implement the Book Information using JDBC.	CO4	L4	12M

UNIT-V

9	a	How XML is changing the Web?	CO5	L2	6M
	b	Write short notes on simple Ajax application.	CO5	L6	6M
		OR			
10	a	What is MIME?	CO5	L1	6M
	b	What is UDDI?	CO5	L3	6M

*** END ***

O.P.Code: 19ME0302	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations May-2025

ENGINEERING GRAPHICS

(Common to CE, EEE, ME & AGE)

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

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

UNIT-I

1	Construct a hyperbola with the distance between the focus and directrix as 50 and eccentricity as 3/2. Also, draw normal and tangent to the curve at a point 30 from the directrix.	CO1	L2	12M
	OR			
2	Construct a cycloid, given the diameter of the generating circle as 40 mm. Draw the tangent to the curve at a point on it, 35 mm from the line.	CO1	L3	12M

UNIT-II

3	A point A is 15 mm above HP and 20 mm in front of VP. Another point B is 25mm behind VP and 40 mm below HP. Draw the projections of A and B, Keeping the distance between the projectors equal to 90 mm. Draw straight lines , joining their top views and front views.	CO2	L2	12M
	OR			
4	A regular pentagon of 30 mm side is resting on one of its edges on H.P, which is inclined at 450 to V.P. Its surface is inclined at 300 to H.P. Draw its projections.	CO2	L3	12M

UNIT-III

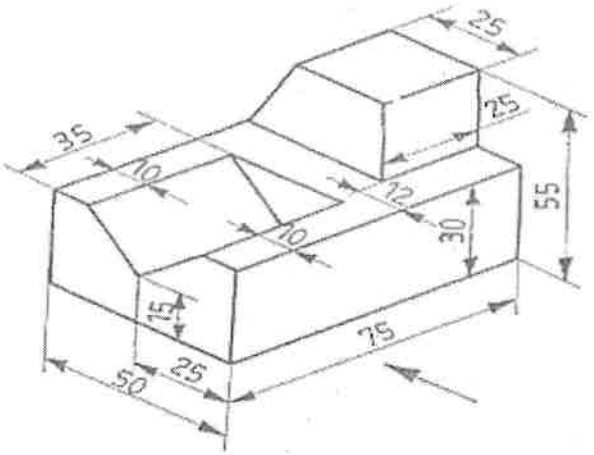
5	Draw the projections of a pentagonal prism of base 25 mm side and axis 50 mm long, when it is resting on one of its rectangular faces on H.P .The axis of the solid is inclined at 450 to V.P.	CO3	L3	12M
	OR			
6	A cone with base 60 mm diameter and axis 75 mm long, is resting on its base on H.P. It is cut by a section plane parallel to H.P and passing through the mid-point of the axis. Draw the projections of the cut solid.	CO3	L2	12M

UNIT-IV

7	A hexagonal prism side of base 30 mm and axis 75 mm long ,is resting on its base on H.P such that, a rectangular face is parallel to V.P. It is cut by a section plane, perpendicular to V.P and inclined at 300 to H.P. The section plane is passing through the top end of an extreme lateral edge of the prism. Draw the development of the lateral surface of the cut prism.	CO4	L2	12M
	OR			
8	A vertical cylinder 60 mm diameter, is penetrated by another cylinder of 45 mm diameter. The axes of the two cylinders are intersecting at right angle. Draw the projections of the two cylinders, showing the lines (curves) of intersection.	CO4	L3	12M

UNIT-V

9	Draw the isometric view of a pentagonal pyramid side of base 25 mm and axis 60 mm long. The pyramid is resting on its base on H.P, with an edge of the base away from the observer and parallel to V.P.	CO5	L4	12M
	OR			
10	Draw three views of the blocks shown pictorially in figure according to first angle projection.	CO5	L4	12M



*** END ***

O.P.Code: 19HS0833	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations May-2025
NUMERICAL METHODS, PROBABILITY & STATISTICS
(AGE & ME)

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

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

UNIT-I

1 Find a real root of the equation $xe^x - \cos x = 0$ using Newton – Raphson method. **CO1 L1 12M**

OR

2 From the following table values of x and $y=tan\ x$. Interpolate values of y when $x=0.12$ and $x=0.28$. **CO1 L1 12M**

x	0.10	0.15	0.20	0.25	0.30
y	0.1003	0.1511	0.2027	0.2553	0.3093

UNIT-II

3 Using Euler's method, find an approximate value of y corresponding to given that $\frac{dy}{dx} = x + y$ and $y = 1$ when $x = 0$ taking step size $h = 0.1$. **CO2 L3 12M**

OR

4 **a** Compute $\int_0^4 e^x dx$ by simpson's $\frac{3}{8}$ rule with 12 sub divisions. **CO2 L5 6M**

b Compute $\int_3^7 x^2 \log x\, dx$ by Trapezoidal rule and simpson's $\frac{1}{3}$ rule by taking 10 sub divisions. **CO2 L5 6M**

UNIT-III

5 Compute the first four central moments to the following data and also find Sheppard's correction, β_1 and β_2 **CO3 L6 12M**

Class intervals	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	2	8	12	40	20	15	3

OR

6 Two dice are thrown. Let A be the event that the sum of the point on the faces is 9. Let B be theevent that at least one number is 6. **CO3 L1 12M**
Find *(i)* $P(A \cap B)$ *(ii)* $P(A \cup B)$ *(iii)* $P(A^c \cup B^c)$ *(iv)* $P(A^c \cap B^c)$
(v) $P(A \cap B^c)$.

UNIT-IV

7 A random variable X has the following probability function **CO4 L5 12M**

X	0	1	2	3	4	5	6	7
$P(X)$	0	K	2K	2K	3K	K^2	$2K^2$	$7K^2+K$

Determine *(i)* K *(ii)* Mean *(iii)* variance *(iv)* if $P(X \le K) > 1/2$, find the minimum value of K.

OR

8 Probability density function of a random variable X is **CO4 L6 12M**

$$f(x)=\begin{cases}\frac{1}{2}\sin x, \text{ for } 0\le x\le \pi\\ 0, \text{ elsewhere}\end{cases}$$

Find the mean, mode and median of the distribution and also find the probability between 0 and $\frac{\pi}{2}$.

UNIT-V

9 **a** Derive mean and variance of Binomial distribution. **CO5 L3 6M**

b 20% of items produced from a factory are defective. Find the probability that in a sample of 5 chosen at random *(i)* one is defective *(ii)* $P(1< x <4)$. **CO5 L6 6M**

OR

10 Fit a Poisson distribution to the following data **CO5 L5 12M**

x	0	1	2	3	4	5	Total
f	142	156	69	27	5	1	400

***** END *****

O.P.Code: 19CE0111	R19	H.T.No.										

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. II Year II Semester Supplementary Examinations May-2025

STRUCTURAL ANALYSIS

(Civil Engineering)

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

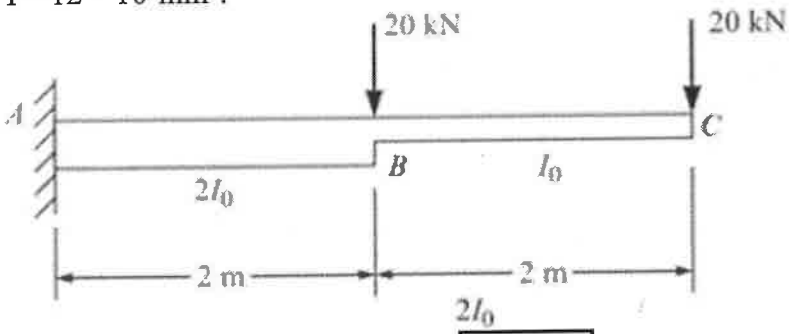
(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	Draw Influence line diagrams for simply supported beams	**CO2**	**L4**	**12M**
	OR			
2	A simply supported beam has a span of 15 m. UDL of 40 kN/m and 5m long crosses the girder from left to right. Draw the influence line diagram for shear force and bending moment at a section 6m from left end. Use these diagrams to calculate the maximum shear force and bending moment at this section.	**CO2**	**L4**	**12M**

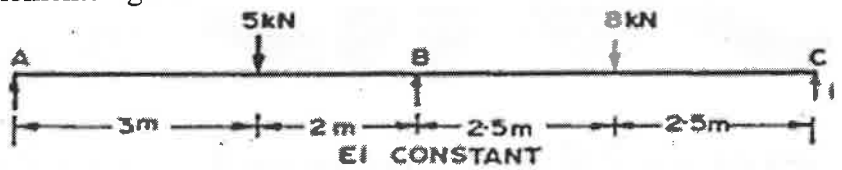
UNIT-II

3	Derive the expression for equation for unit load method	**CO3**	**L4**	**12M**
	OR			
4	Determine the deflection and rotation at the free end of the cantilever beam shown in Figure. Use unit load method. Given $E=2x10^5$ N/mm^2 and I = 12 * 10^6mm^4.	**CO3**	**L4**	**12M**



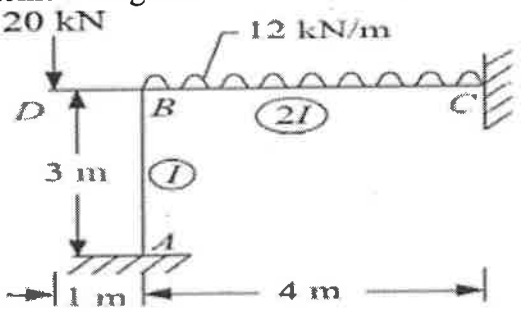
UNIT-III

5	Analyse the continuous beam shown in Figure and draw bending momentdiagram	**CO4**	**L4**	**12M**



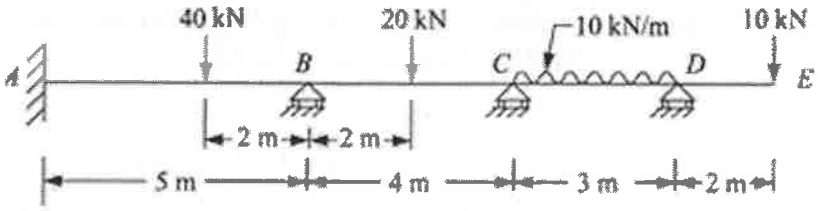
OR

6	Analyse the frame shown in Figure by slope deflection method and drawbending moment diagram.	**CO4**	**L4**	**12M**



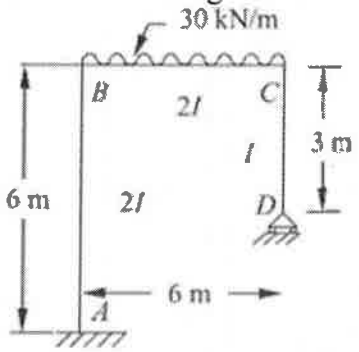
UNIT-IV

7	Analysethe continuous beam shown in Figure by moment distribution method	CO5	L4	12M



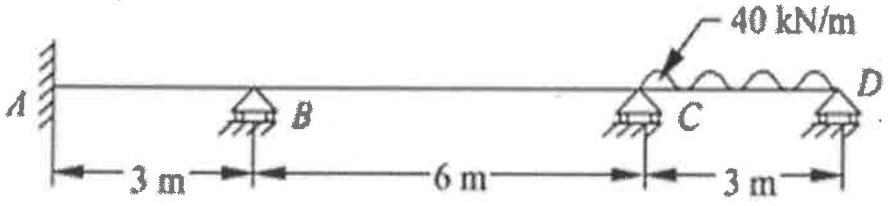
OR

8	Analyse the rigid jointed frame shown in Figure by moment distribution method and draw bending moment diagram.	CO5	L4	12M



UNIT-V

9	Support B of the continuous beam shown in Figure has a downward settlement of 30 mm. Calculate the support reactions at D by the flexibility matrix method.Take EI = 5600 kN m^2	CO6	L4	12M



OR

10	Explain the following: i) Degree of static and kinematic indeterminacy i) Relationship between flexibility and stiffness matrices	CO6	L4	12M

***** END *****

O.P.Code: 19CS0509	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. II Year II Semester Supplementary Examinations May-2025
FORMAL LANGUAGES AND AUTOMATA THEORY
(Common to CSE & CSIT)

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

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

UNIT-I

1	a	Define relations on sets and explain its properties with an example.	CO1	L4	6M
	b	Differences between DFA and NFA with examples.	CO1	L3	6M
		OR			
2	a	Write why minimization of finite automata is required and explain the procedure adapted for minimization of finite automata in Table filling method	CO1	L4	6M
	b	Consider the below finite automata and check whether the strings are accepted or not.	CO1	L2	6M

States (Q)	Input Alphabtes	
	0	1
→q0	q1	q3
q1	q0	q2
(q2)	q3	q1
q3	q2	q0

(i) 0001 (ii) 1010 (iii) 1001 (iv)0101

UNIT-II

3	a	Explain how equivalence between two FA is verified with example.	CO2	L3	6M
	b	Define Regular expressions. List its Applications.	CO2	L2	6M
		OR			
4	a	State Pumping lemma for regular languages.	CO2	L4	6M
	b	List and explain the Closure properties of regular language and applications of Pumping Lemma.	CO2	L2	6M

UNIT-III

5	a	Write the process adapted to convert the grammar into CNF.	CO3	L3	6M
	b	Explain the e Greibach Normal Form.	CO3	L2	6M
		OR			
6	a	List the closure properties of CFLs.	CO3	L4	6M
	b	State Pumping lemma for Context-free language.	CO3	L2	6M

UNIT-IV

7	a	A PDA is more powerful than a finite automaton. Justify this statement.	CO4	L3	6M
	b	Construct a PDA which recognizes all strings that contain equal number of 0's and 1's.	CO4	L2	6M

		OR			
8	**a**	Define PDA? Explain graphical notation of PDA.	**CO4**	**L4**	**6M**
	b	Explain acceptance of PDA with empty stack.	**CO4**	**L2**	**6M**
		UNIT-V			
9	**a**	Differentiate PCP and MPCP.	**CO5**	**L3**	**6M**
	b	Illustrate Linear Bounded Automta.	**CO5**	**L2**	**6M**
		OR			
10		Define Mathematical Definition of Turing Machine. Describe Recursive and Recursively Enumerable Languages.	**CO5**	**L4**	**12M**

***** END *****

O.P.Code:18EE0240	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Supplementary Examinations May-2025
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Common to CE & AGE)

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)

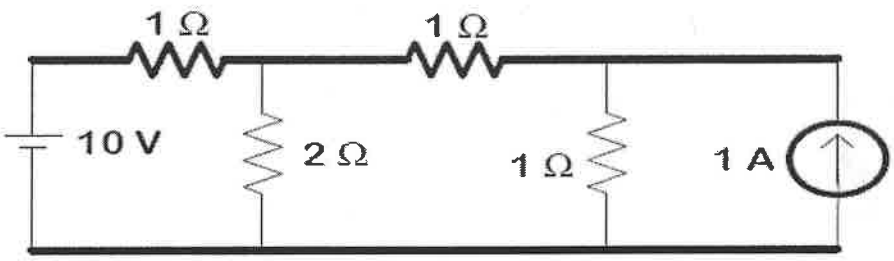
PART-A

UNIT-I

1		Discuss about various energy sources in detail	CO1	L1	10M
		OR			
2		Explain the following in detail i) Resistive networks ii) Inductive networks iii) Capacitive networks	CO1	L2	10M

UNIT-II

3	a	State Thevenin's theorem	CO2	L1	2M
	b	Calculate the current in 2Ω resistor in the given circuit using super position theorem	CO2	L3	8M



OR

4	a	The given ABCD parameters are A=2, B=0.9, C=1.2, D=0.5. Find Y parameters	CO2	L3	5M
	b	Briefly discuss about Admittance parameters	CO2	L2	5M

UNIT-III

5	a	Discuss about the principle of operation of DC motors	CO3	L2	5M
	b	Derive Torque equation of DC motor	CO3	L2	5M
		OR			
6	a	Derive EMF equation of a transformer	CO3	L2	5M
	b	Explain constructional details of transformer	CO3	L3	5M

PART-B

UNIT-IV

7		Describe the working of a PN junction diode when it is connected in forward bias and reverse bias. Draw VI Characteristics of PN Junction Diode	CO4	L3	10M

OR

8	a	With neat diagram, explain the working principle of Full Wave Rectifier. Draw its input and Output waveforms	CO4	L3	5M
	b	Derive the expression for Ripple factor and Efficiency of Full Wave Rectifier	CO4	L2	5M

UNIT-V

9	a	Discuss the operation of PNP transistor with diagram	CO5	L2	5M
	b	Explain the characteristics of CE configuration	CO5	L2	5M

OR

10	a	Write the application of a transistor and explain the transistor acts a switch	CO5	L1	5M
	b	Explain in detail how a transistor working as an amplifier	CO5	L3	5M

UNIT-VI

11	a	Explain the construction and principle of operation of N-channel JFET	CO6	L3	5M
	b	Explain the output characteristics of JFET	CO6	L3	5M

OR

12	a	Write the application of MOSFET	CO6	L1	5M
	b	Write the comparision BJT and JFET	CO6	L1	5M

***** END *****