O.P.Code: 19HS0815	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

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

ENTREPRENEURSHIP DEVELOPMENT

(Common to ECE, CSIT & CSE)

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

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

UNIT-I

1	a	Define Entrepreneurship. Explain the functions of Entrepreneur.	CO1	L1	6M
	b	List out and explain the Qualities of an Entrepreneur.	CO1	L1	6M
		OR			
2	a	Narrate the differences between Entrepreneurship & Intrapreneurship.	CO1	L3	6M
	b	Discuss in detail about the role of entrereneurship in economic development.	CO1	L1	6M

UNIT-II

3	a	Explain the concept of Small Business.	CO2	L2	6M
	b	Discuss the role of MSME's in improving the economy.	CO2	L1	6M
		OR			
4	a	What are the special forms of Business Ownership.	CO2	L1	6M
	b	Explain the adavantages and disadvantages of Sole proprietorship.	CO2	L2	6M

UNIT-III

5	a	Differentiate between invention and Innovation.	CO3	L4	6M
	b	Explain various methods of generating ideas and opportunities.	CO3	L2	6M
		OR			
6	a	Briefly explain the various sources of information for start-up Entrepreneurs in India.	CO3	L2	6M
	b	What are the problems of Start-ups without IPR's	CO3	L1	6M

UNIT-IV

7	a	Explain in detail about McClelland's Acquired need theory.	CO4	L2	6M
	b	What are the loans available for starting industrial Ventures in India.	CO4	L1	6M
		OR			
8	a	What are the opportunities for Entrepreneurs in India.	CO4	L1	6M
	b	What are the various sources of finance for starting of an Entreprise.	CO4	L1	6M

UNIT-V

9	a	Make a note on the features of project.	CO5	L3	6M
	b	Discuss in detail about technical Faesibility.	CO5	L2	6M
		OR			
10	a	Explain project life cycle in project planning.	CO5	L2	6M
	b	What are the financial requirements for the preparation of the project.	CO5	L1	6M

***** END *****

O.P.Code:19CI0605	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
CRYPTOGRAPHY & NETWORK SECURITY
(Computer Science & Information Technology)

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

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

UNIT-I

1	a	Specify the components of encryption algorithm.	CO1	L4	6M
	b	Explain about steganography.	CO1	L2	6M
		OR			
2	a	What are the principles of security?	CO1	L1	6M
	b	Describe the various security mechanisms.	CO1	L2	6M

UNIT-II

3	a	What is the difference between block cipher and stream cipher?	CO2	L1	6M
	b	Extend the Diffie-Hellman Key Exchange.	CO2	L2	6M
		OR			
4	a	List out the attacks to RSA and define each.	CO2	L1	6M
	b	List the steps in RSA algorithm.	CO2	L5	6M

UNIT-III

5	a	Differentiate MAC and Hash function.	CO3	L2	6M
	b	What are the applications of cryptographic hash function?	CO3	L1	6M
		OR			
6	a	Describe Secure hash Algorithm in detail.	CO3	L2	6M
	b	What are the requirements for message authentication.	CO3	L1	6M

UNIT-IV

7	a	What are the parameters in TLS ?	CO4	L1	6M
	b	Explain about wireless security.	CO4	L2	6M
		OR			
8	a	What protocols comprise TLS.	CO4	L1	6M
	b	List and briefly define the SSH protocols.	CO4	L1	6M

UNIT-V

9	a	Explain in detail about the security services for E-mail.	CO5	L2	6M
	b	Explain the operation description of PGP.	CO5	L2	6M
		OR			
10	a	What is Cross site Scripting Vulnerability.	CO5	L1	6M
	b	List out the four principal services provided by S/MIME.	CO5	L1	6M

***** END *****

O.P.Code: 19EE0224	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
POWER QUALITY
(Electrical & Electronics Engineering)

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

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

UNIT-I

1	a	What is power quality? Why we are concern about power quality?	CO1	L1	6M
	b	Explain about the power quality evaluation procedure.	CO1	L2	6M

OR

2	a	Explain the power quality terminology.	CO1	L2	6M
	b	Draw and explain ITI curve.	CO1	L2	6M

UNIT-II

3	a	Explain the long duration voltage variations.	CO2	L2	6M
	b	Classify the principles of regulating the voltage.	CO2	L2	6M

OR

4		Explain the effect of line drop compensation on the voltage profile.	CO2	L3	12M

UNIT-III

5		What is harmonic distortion? Discuss about the voltage versus current distortion.	CO2	L3	12M

OR

6		What are effects of harmonics? Explain harmonic distortion evaluation procedure?	CO2	L2	12M

UNIT-IV

7	a	Write a short note on power quality monitoring standards.	CO3	L1	6M
	b	Explain about the flicker meters.	CO3	L2	6M

OR

8		Explain about the permanent power quality monitoring equipment.	CO3	L3	12M

UNIT-V

9		What is the need for current limiter? Discuss the operation of a Solid-state current limiter.	CO4	L2	12M

OR

10		Explain the principle of DVR operation used for sag mitigation.	CO4	L3	12M

***** END *****

O.P.Code: 19EC0433	R20	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
VLSI DESIGN
(Electronics & Communication Engineering)

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

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

UNIT-I

1	a	Summarize the evolution of microelectronics.	CO1	L2	6M
	b	Illustrate about basic MOS transistors.	CO1	L2	6M
		OR			
2		Explain the steps involved in P-Well CMOS fabrication process with neat sketches.	CO2	L2	12M

UNIT-II

3	a	Construct the stick diagram of a 2-input CMOS NAND gate.	CO3	L3	6M
	b	Illustrate design rules for wires and MOS transistors.	CO3	L2	6M
		OR			
4	a	Illustrate λ-design rules for contact cuts.	CO3	L2	6M
	b	How a P-MOS transistor formsin lambda-based design rules? Explain.	CO3	L1	6M

UNIT-III

5	a	Sketch 2 x 1 mux using transmission gates.	CO4	L3	6M
	b	Explain the implementation of AOI using CMOS design style with neat sketches.	CO4	L2	6M
		OR			
6		Explain the following with an example (i) Domino CMOS logic. (ii) NOR A logic.	CO6	L2	12M

UNIT-IV

7	a	Explain different adder designs in sub circuit design with neat sketches.	CO4	L2	6M
	b	Differentiate Comparator and Magnitude Comparator with example.	CO4	L4	6M
		OR			
8		Summarize the following. (i) Unsigned magnitude comparator. (ii) Asynchronous Counters.	CO4	L2	12M

UNIT-V

9	a	Illustrate the architecture of FPGA with neat sketch.	CO6	L3	6M
	b	Discuss about the merits of FPGA over other PLD architectures.	CO5	L2	6M
		OR			
10		Explain Chip Level Test techniques and its methodology.	CO6	L2	12M

***** END *****

O.P.Code: 19CS0530	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
CYBER SECURITY
(Computer Science & Engineering)

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

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

UNIT-I

1	a	Define cybercrime and information security.	CO1	L1	6M
	b	Discuss about who are cybercriminals.	CO1	L2	6M
		OR			
2	a	Summarize about cybercrime in "the legal perspective"	CO1	L2	6M
	b	Summarize about cybercrime in "the Indian perspective"	CO1	L2	6M

UNIT-II

3	a	Discuss about Social Engineering.	CO2	L2	6M
	b	Explain each type of Social Engineering in detail.	CO2	L2	6M
		OR			
4	a	What is Cloud Computing? Classify the types in it and list the advantages.	CO2	L4	6M
	b	Discuss the security challenges in Cloud Computing.	CO2	L2	6M

UNIT-III

5	a	Compare Mobile Computing Vs Wireless Computing.	CO3	L5	6M
	b	Distinguish Malwares, viruses and worms.	CO3	L4	6M
		OR			
6	a	Discuss the attacks on mobile or cell phones.	CO3	L2	6M
	b	Compare Mishing, Smishing and Vishing in detail.	CO3	L5	6M

UNIT-IV

7	a	Outline the purpose of proxy Server in detail	CO4	L2	6M
	b	Who are Anonymizers and how they get affected by scams in cybercrime? Explain.	CO4	L1	6M
		OR			
8	a	Define DOS and DDOS.	CO4	L1	6M
	b	Apply the concept of Daniel of Service with an example and Explain.	CO4	L3	6M

UNIT-V

9	a	What are the types of cookies? Explain in detail	CO5	L1	6M
	b	Discuss how to protect online protection	CO5	L2	6M
		OR			
10	a	Explain social computing for organizations.	CO5	L2	6M
	b	Explain social computing and associated challenges for organizations	CO5	L2	6M

*** END ***

O.P.Code: 19CI0611	R19	H.T.No.										

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

B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
SOFTWARE PROCESS & PROJECT MANAGEMENT
(Computer Science & Information Technology)

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

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

UNIT-I

1	a	What are six principles of software process change?	CO1	L1	6M
	b	List out CMMI maturity levels. Explain it.	CO1	L1	6M
		OR			
2	a	What is the importance of Software maturity Framework?	CO1	L1	6M
	b	Define Principles of Software Process Change. Explain the Six Basic Principles of SoftwareProcess Change.	CO1	L1	6M

UNIT-II

3	a	Explain the elaboration phase in life cycle process.	CO2	L2	6M
	b	Explain the construction phase and transition phase in life cycle process.	CO2	L2	6M
		OR			
4	a	Examine pragmatic software cost estimation.	CO2	L1	6M
	b	Summarizes the differences in emphasis between engineering and production stages.	CO2	L5	6M

UNIT-III

5		Explain the following milestones. i. Life cycle objective milestones ii. . Life cycle architecture milestones	CO3	L2	12M
		OR			
6	a	Interpret the sequence of life-cycle check points in major milestones.	CO3	L3	6M
	b	Demonstrate the typical minor milestones in life cycle of an iteration.	CO3	L3	6M

UNIT-IV

7	a	Outline the software development team activities.	CO4	L1	6M
	b	List out software assessment team activities.	CO4	L1	6M
		OR			
8	a	Describe the project environment in details.	CO4	L2	6M
	b	Define Round Trip Engineering. Explain it.	CO4	L1	6M

UNIT-V

9	a	Summarize the distinguishing characteristics of each CSCI.	CO5	L2	6M
	b	Explain about the incremental design process.	CO5	L2	6M
		OR			
10	a	Discuss about CCPDS-R case study.	CO5	L2	6M
	b	Summarize the schedule for the IPDR demonstration activities.	CO5	L2	6M

***** END *****

O.P.Code: 19CS0539	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
HUMAN COMPUTER INTERACTION
(Common to CSE & CSIT)

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

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

		UNIT-I			
1		Explain the general principle of User Interface design.	CO1	L1	12M
		OR			
2	a	Summarize history of the Screen design.	CO1	L2	6M
	b	Analyze Xerox STAR's general principle.	CO1	L4	6M
		UNIT-II			
3	a	Explain in detail about determining basic business functions.	CO2	L2	6M
	b	Discuss in detail about visually pleasing composition.	CO2	L3	6M
		OR			
4	a	Justify amount of information in screen designing.	CO2	L5	6M
	b	Explain about screen navigation and flow.	CO2	L2	6M
		UNIT-III			
5		Explain about Device-based controls and Screen-based controls.	CO3	L2	12M
		OR			
6	a	Discuss elaborately various components of a Window.	CO4	L3	6M
	b	Construct various structures of menus with diagrams.	CO3	L4	6M
		UNIT-IV			
7	a	Analyze various kinds of testing techniques.	CO5	L4	6M
	b	Categorize various graphics available while designing GUI in HCI.	CO5	L4	6M
		OR			
8	a	Examine in detail colors and human vision in HCI.	CO5	L4	6M
	b	What is an Icon? Explain different icons in detail.	CO5	L2	6M
		UNIT-V			
9		Examine the following term i) Indirect pointing devices ii) Function keys of Keyboard	CO6	L4	12M
		OR			
10	a	Discuss drivers in interaction devices.	CO6	L2	6M
	b	Write about the Borland J Builder interface building tool.	CO6	L3	6M

***** END *****

O.P.Code: 19EC0440	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
FIBER OPTIC COMMUNICATIONS
(Electronics & Communications Engineering)

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

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

UNIT-I

1	a	List the applications of optical fiber communication.	CO1	L1	6M
	b	Explain the ray theory transmission with neat sketch.	CO1	L2	6M
		OR			
2	a	Illustrate the impact of group delays in optical communication.	CO2	L2	6M
	b	What is attenuation? Explain in detail.	CO2	L2	6M

UNIT-II

3	a	Explain in brief about direct and indirect band gap materials in detail.	CO3	L2	6M
	b	Explain LED Structure with neat sketch.	CO3	L2	6M
		OR			
4	a	Illustrate the working principle of Distributed feedback LASER diode.	CO3	L2	6M
	b	The Radiative and non-radiative recombination life times of minority carriers in the active region of a double heterojunction LED are 60 nsec and 90 nsec respectively. Evaluate the total carrier recombination life time and optical power generated internally if the peak emission wavelength is 870 nm and drift current is 40 mA.	CO3	L4	6M

UNIT-III

5	a	Explain in detail the operation of Avalanche Photo Diode using suitable diagram.	CO3	L2	6M
	b	In GaAs Photodetector a pulse of 86ns emits 6*106 photons at 1300 nm wavelength. Average e-h pair generated are $6.4*10^6$ Calculate the quantum efficiency of the detector.	CO3	L3	6M
		OR			
6	a	Deduce the equation for S/N ratio of an optical fiber.	CO3	L4	6M
	b	Compute the Bandwidth of a photo detector having the parameters as follows:Photo diode capacitance 3pf, amplifier capacitance 4 pf, load resistance 60 Ω and amplifier input resistance is 1MΩ.	CO3	L3	6M

UNIT-IV

7	a	What is bandwidth budget?	CO4	L2	6M
	b	Describe about power budget with examples.	CO4	L2	6M
		OR			
8	a	Explain the optical multiplexing and de-multiplexing techniques.	CO5	L2	6M
	b	An optical transmission system is constrained to have 600 GHZ channel spacing. How many wavelength channels can be utilized in the 1636 to 1666nm spectral band?	CO5	L2	6M

UNIT-V

9		Explain in detail about Optical network topologies.	CO5	L2	12M
		OR			
10	a	Explain the Performance of WDM+EDFA systems in optical networks	CO6	L2	6M
	b	Discuss the basic concept of optical CDMA.	CO6	L2	6M

***** END *****

Q.P.Code: 19EE0231 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
NEURAL NETWORKS AND FUZZY LOGIC
(Electrical & Electronics Engineering)

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

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

UNIT-I

1	a	Explain organization of human brain.	CO1	L2	6M
	b	Discuss the functioning of biological neuron.	CO1	L2	6M
		OR			
2		Explain types of activation function & Explain Neural dynamics.	CO1	L3	12M

UNIT-II

3		Explain supervised learning and unsipervised in detail with block diagram.	CO2	L3	12M
		OR			
4		Explain input layer, hidden layer &output layer computations in multi layer feed forward networks.	CO2	L3	12M

UNIT-III

5		Briefly explain the working principle of hetero correlators.	CO3	L3	12M
		OR			
6		Explain the working principle of BAM.	CO3	L3	12M

UNIT-IV

7	a	Explain Operations performed on crisp sets.	CO4	L3	6M
	b	Explain operations performed on fuzzy sets.	CO4	L3	6M
		OR			
8		Explain Composition operation performed on fuzzy relation with example.	CO4	L3	12M

UNIT-V

9	a	Explain fuzzy inference using Modus ponens and Modus tollens.	CO5	L3	6M
	b	List out different defuzzication methods available.	CO5	L3	6M
		OR			
10	a	Explain Centre of gravity defuzzification method with an example.	CO5	L3	8M
	b	Briefly explain fuzzy logic control mechanism.	CO5	L3	4M

***** END *****

O.P.Code: 19CS0544	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

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

SOFT COMPUTING

(Common to CSIT & CSE)

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

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

UNIT-I

1	a	Illustrate the basic components of Artificial Intelligence and its applications.	CO1	L3	8M
	b	Compare soft computing and hard computing.	CO1	L4	4M
		OR			
2		Illustrate the Perceptron Network with neat diagram.	CO1	L3	12M
		UNIT-II			
3		Explain the Back propagation of Neural Network with neat diagram and flowchart.	CO2	L2	12M
		OR			
4		Describe the structure of back propagation neural network and derive the learning rule for the back propagation algorithm.	CO2	L2	12M
		UNIT-III			
5	a	Explain with neat block diagram the various components of a Fuzzy Logic System	CO3	L2	8M
	b	Differentiate the fuzzy sets and classical sets.	CO3	L4	4M
		OR			
6		Summarize the following terms: i) Fuzzy Arithmetic ii) Fuzzy Measures	CO3	L5	12M
		UNIT-IV			
7		Explain the basic terminologies in Genetic Algorithm and illustrate the working of GA?	CO4	L2	12M
		OR			
8	a	Explain the various cross over operations performed in GA.	CO4	L2	6M
	b	Illustrate the different bitwise operators in GA.	CO4	L3	6M
		UNIT-V			
9		Discuss in detail about Genetic learning of Rule Base and Knowledge Base.	CO5	L6	12M
		OR			
10	a	Infer the characteristics of Neuro-fuzzy Hybrid System.	CO5	L3	6M
	b	Describe the working principle of Neuro-fuzzy system learn?	CO5	L2	6M

***** END *****

O.P.Code: 19CS0529	R19	H.T.No.									

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

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

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

UNIT-I

1	a	Explain in detail about Scalable computing over the Internet.	CO1	L2	6M
	b	Discuss the various Distributed System Design objectives.	CO1	L2	6M
		OR			
2	a	Differentiate between parallel and distributed computing Paradigms.	CO1	L4	6M
	b	Explain in detail about Grid Architecture and standards	CO1	L2	6M

UNIT-II

3	a	What are Hybrid Cloud and SLA Management? Explain it in detail.	CO2	L6	6M
	b	Identify the Approaches in SLA Management.	CO2	L1	6M
		OR			
4	a	Why SLA is important in cloud computing. Express your opinion.	CO2	L4	6M
	b	Outline the importance of Hybrid Cloud.	CO2	L5	6M

UNIT-III

5	a	Illustrate Hypervisor and Xen Architecture.	CO3	L4	6M
	b	Discriminate the Binary Translation with Full Virtualization.	CO3	L4	6M
		OR			
6	a	Analyze the Hardware Support for Virtualization.	CO3	L4	6M
	b	Elaborate the CPU Virtualization in detail.	CO3	L4	6M

UNIT-IV

7	a	Explain the key issues in the cloud.	CO6	L2	8M
	b	Who are cloud service providers?	CO6	L1	4M
		OR			
8	a	Explain about Authorization Methods.	CO6	L2	6M
	b	What are the services provided by IAM?	CO6	L2	6M

UNIT-V

9		Explain about general security in mobile cloud computing.	CO6	L2	12M
		OR			
10	a	Write about data access in mobile cloud computing.	CO6	L1	6M
	b	List out the applications of mobile cloud computing?	CO6	L1	6M

*** END ***

O.P.Code: 19EC0426 | R19 | H.T.No.

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

B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
WIRELESS COMMUNICATIONS
(Electronics & Communications Engineering)

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

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

		UNIT-I			
1	a	Discuss briefly about the evolution of Mobile radio communication.	CO1	L1	6M
	b	Tabulate list of terms used to describe various elements of wireless communication systems.	CO1	L1	6M
		OR			
2	a	How cellular frequency reuse concept is useful in allocating same frequency channels in various cluster of cells.	CO6	L2	6M
	b	Classify the channel assignment strategies and explain in detail.	CO5	L4	6M
		UNIT-II			
3	a	How the received signal strength is predicted using the free space propagation model? Explain?	CO3	L1	6M
	b	If a transmitter produces 50W of power, express the transmit power in units of dBm, dBW. If 50W is applied to a unity gain antenna with 900MHz carrier frequency, find the receiver power in dBm at a free space distance of 100m from the antenna. What is Pr (10 km)? Assume unity gain receiver antenna.	CO5	L4	6M
		OR			
4	a	(i) Explain reflection from perfect conductors (ii) Explain multiple knife-edge diffraction.	CO1	L1	6M
	b	Find the Fraunhoher distance for an antenna with maximum dimension of 1m and operating frequency of 900MHz.If antenna have unity gain. Calculate the path loss?	CO1	L3	6M
		UNIT-III			
5	a	Describe small-scale multipath propagation.	CO2	L2	6M
	b	Describe the factors influencing small scale fading in the radio propagation channel.	CO1	L1	6M
		OR			
6	a	Evaluate slow fading due to Doppler spread.	CO3	L4	6M
	b	Summarize the relation between the various multipath parameters and the type of fading experienced by the signal.	CO3	L2	6M
		UNIT-IV			
7	a	Explain about fundamentals of Equalization.	CO4	L2	6M
	b	Explain the basic structure of an adaptive equalizer with neat diagram.	CO4	L2	6M
		OR			
8	a	Describe about macro diversity and express the mathematical representation of macro diversity.	CO4	L2	6M
	b	Explain about micro diversity in wireless communication.	CO1	L2	6M
		UNIT-V			
9	a	Explain the multiple access scheme for narrowband systems and wideband systems.	CO1	L2	6M
	b	Describe the features of the frequency division multiple access (FDMA) scheme.	CO1	L2	6M
		OR			
10	a	Explain capacity in non-fading channels.	CO2	L2	6M
	b	Derive the expression for capacity in fading channels.	CO2	L3	6M

***** END *****

O.P.Code: 19EE0223	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
ELECTRICAL DISTRIBUTION SYSTEMS
(Electrical & Electronics Engineering)

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

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

UNIT-I

1		Discuss the relationship between load factor and loss factor.	CO1	L4	12M
		OR			
2	a	Define and explain the terms feeder, distributor &service mains with diagram.	CO1	L1	6M
	b	Discuss about Diversity factor and Coincidence factor.	CO1	L3	6M

UNIT-II

3		Derive the expression for power factor referred to receiving end Voltage in A.C. distributor with vector diagram.	CO2	L3	12M
		OR			
4	a	Discuss importance of voltage drop and power loss calculations in distribution.	CO2	L3	6M
	b	Explain with neat sketches radial type and loop type primary feeders.	CO2	L2	6M

UNIT-III

5	a	What is Neutral grounding? What are the advantages of neutral grounding.	CO3	L1	6M
	b	What are the disadvantages of ungrounded system?	CO3	L1	6M
		OR			
6		Explain how do you analyze a substation service area with 'n' primary feeders.	CO3	L1	12M

UNIT-IV

7		A single phase A.C. Generator supplies the following loads : (i) Lighting load of 20 kW at unity power factor. (ii) Induction motor load of 100 kW at P.F. 0·707 lagging. (iii) Synchronous motor load of 50 kW at P.F 0·9 leading. Calculate the total KW and KVA delivered by the generator and the power factor at which it works.	CO4	L4	12M
		OR			
8	a	Determine the optimum capacitor allocation for improvement of power factor.	CO4	L1	6M
	b	List the various causes of low power factor and explain.	CO4	L1	6M

UNIT-V

9		Explain the distribution system Project planning with diagram.	CO5	L3	12M
		OR			
10	a	What is communication ?Give Methods of Communication.	CO6	L1	6M
	b	Explain about Sensors.	CO6	L1	6M

***** END *****

O.P.Code: 19EC0437	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
DIGITAL IMAGE PROCESSING
(Electronics & Communications Engineering)

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

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

UNIT-I

1	a	Demonstrate the Arithmetic operations on digital images with relevant expressions.	CO1	L2	6M
	b	Discuss the different types of spatial operations on digital images with relevant expressions.	CO1	L2	6M
		OR			
2	a	Discuss the components of digital image processing along with the suitable block diagram.	CO1	L2	6M
	b	Summarize the three principal sensor arrangements used to transform illumination energy into digital images.	CO1	L3	6M

UNIT-II

3	a	Discuss the properties of Unitary transforms.	CO2	L2	6M
	b	Compute the Discrete Cosine Transform basis matrix for N = 4.	CO2	L4	6M
		OR			
4	a	Compute Harr transform for the given image. $$f(m,n) = \begin{bmatrix} 4 & -1 \\ 2 & -3 \end{bmatrix}$$	CO2	L4	6M
	b	Define KL Transform and give its applications.	CO2	L2	6M

UNIT-III

5	a	Draw the functional block diagram of pseudo colour processing and explain each block.	CO3	L4	6M
	b	Explain the method of converting colours from RGB to HSI.	CO3	L3	6M
		OR			
6	a	Illustrate the contrast stretching in image enhancement with suitable example.	CO3	L2	6M
	b	Explain the sharpening filters in frequency domain along with the required expressions.	CO3	L3	6M

UNIT-IV

7	a	Draw the degradation/restoration model in image processing and describe the each part presented on it.	CO4	L4	6M
	b	Explain the Rayleigh noise and Erlang noise with proper PDF expression.	CO4	L3	6M
		OR			
8	a	Illustrate the Clustering techniques for image segmentation with example.	CO5	L2	6M
	b	Explain the concept of Laplacian of Gaussian (LoG) operator for edge detection.	CO5	L3	6M

UNIT-V

9	a	Discuss the Objective fidelity criteria and subjective fidelity criteria with suitable example.	CO6	L2	6M
	b	Elucidate the functional block diagram of a general image compression system with neat sketch.	CO6	L4	6M

OR

10	a	Describe the procedure for Huffman coding for image compression method.	CO6	L2	6M
	b	Compare the adaptive transform coding and non- adaptive transform coding.	CO6	L4	6M

***** END *****

O.P.Code: 19EE0227	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

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

POWER SEMICONDUCTOR DRIVES

(Electrical and Electronics Engineering)

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

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

UNIT-I

1	With a neat circuit diagram, explain the operation of a 1-ϕ fully controlled converter fed a separately excited DC motor. Illustrate its speed-torque characteristics.	CO1	L3	12M
	OR			
2	A 1-ϕ, 230 V, 50 Hz supply feeds a separately excited DC motor through two 1-ϕ semi-converters, one for the field circuit and the other for the armature circuit. The firing angle of the semi-converter in the field circuit is zero. The field resistance is 200 Ω and the armature resistance R_a is 0.3 Ω. The motor develops a load torque of 50 N-m at 900 rpm. The voltage constant is 0.8V/A-rad/sec and the torque constant is 0.8 N-m/A^2. Assume that the armature and field currents are continuous and constant, and neglect the losses. Determine the, i). field current, ii). firing angle and iii). power factor of the armature semiconverter.	CO1	L3	12M

UNIT-II

3	Explain the operation of a single-phase dual converter fed a separately excited DC motor in non-circulating current mode. Sketch the output voltage and current waveforms.	CO2	L2	12M
	OR			
4	Explain the different types of electrical braking methods used in electrical drives and discuss their relative advantages and limitations.	CO2	L2	12M

UNIT-III

5	Explain the operation of a two-quadrant chopper-fed separately excited DC motor drive. Draw the circuit diagram, associated waveforms, and speed–torque characteristics.	CO3	L3	12M
	OR			
6	A DC series motor is speed controlled by a chopper from a 600 V DC source. The armature and field resistances are 0.05 Ω and 0.07 Ω respectively. The armature current is continuous and ripple-free with an average value of 500A. The back emf constant is K_t = 15.27 mv/A-rad/sec. If the duty cycle of the converter is 60%. Determine the, i). power drwan from the input source, ii). equivalent output resistance of the converter, iii). motor speed and developed torque.	CO3	L3	12M

UNIT-IV

7	Explain the speed-torque characteristics of a three-phase induction motor operating under stator voltage control.	CO4	L2	12M
	OR			
8	Explain why the static Kramer drive cannot be used for super sychronous speed ranges with neat sketch. Support the explanation with necessary reasons.	CO4	L2	12M

UNIT-V

9	Describe the separately controlled mode and self-controlled mode of operation of a synchronous motor drive in detail. Compare their performance characteristics.	CO5	L2	12M

OR

10	A 5 MW, 3-phase, 11 kV, star-connected, 6-pole, 50 Hz, 0.9 leading power factor synchronous motor has a synchronous reactance of 10 Ω and armature resistance equal to 0 Ω. The rated field current is 50 A. The machine is operated under variable frequency control at constant V/F ratio up to the base speed and constant voltage above the base speed. Determine the, i). torque and field current for a rated armature current at 750 rpm and 0.8 leading power factor, ii). armature current and power factor for half of the rated motor torque at 1500 rpm and rated field current.	CO5	L3	12M

***** END *****

O.P.Code: 19CS0537	R19	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations October/November-2025
SOFTWARE PROJECT MANAGEMENT
(Computer Science Engineering)

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

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

UNIT-I

1	a	Describe the categories of software projects.	CO1	L2	6M
	b	Explain the process of setting objectives within software project management.	CO1	L2	6M

OR

2	a	Discuss in detail the activities and methodologies in planning a project.	CO1	L2	6M
	b	Explain the concept of management control with suitable examples.	CO1	L2	6M

UNIT-II

3	a	Demonstrate the working of the Spiral Model of software development illustrating its phases with a neat labeled diagram.	CO2	L3	6M
	b	Determine the phases of the Rapid Application Development (RAD) model with suitable examples.	CO2	L3	6M

OR

4	a	Illustrate the concept of Software Prototyping in the Software Development Life Cycle (SDLC) with a neat diagram.	CO2	L3	6M
	b	Apply the idea of software prototyping to a software development scenario to validate the unclear requirements.	CO2	L3	6M

UNIT-III

5	a	Assess the objectives of activity planning in project management.	CO3	L3	6M
	b	With a neat sketch, describe the sequencing and scheduling process in activity planning.	CO3	L3	6M

OR

6	a	Evaluate the Critical Path Method (CPM) by performing forward and backward pass computations on a given project network.	CO3	L3	6M
	b	Illustrate different activity-based approaches involved in activity planning.	CO3	L3	6M

UNIT-IV

7	a	Discuss in detail the review process to ensure software quality during development.	CO4	L2	6M

	b	Explain the activities and evaluation criteria of a project termination review in assessing project success.	**CO4**	**L2**	**6M**

OR

8	**a**	Explain cost monitoring in project control with a simple example.	**CO4**	**L2**	**6M**
	b	Elucidate the process of Software Configuration Management (SCM) control.	**CO4**	**L2**	**6M**

UNIT-V

9	**a**	Detail the various methods of staff selection used in organizations.	**CO5**	**L2**	**6M**
	b	Identify the most effective methods for selecting candidates in a technical organization. Justify your choice.	**CO5**	**L3**	**6M**

OR

10	**a**	Explain the Hackman and Oldham Job Characteristics Model and its dimensions. How can each characteristic be applied to enhance productivity in a software development team?	**CO5**	**L2**	**6M**
	b	Demonstrate how effective decision-making techniques and tools support project success in software development.	**CO5**	**L3**	**6M**

***** END *****