SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
OPERATIONS RESEARCH
(Mechanical Engineering)

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

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

UNIT-I

1	Solve the following LPP Maximize $Z=3X_1+5X_2+4X_3$, Subjected To: $2X_1+3X_2 \leq 8$, $2X_2+5X_3 \leq 10$, $3X_1+2X_2+4X_3 \leq 15$ and $X_1,X_2,X_3 \geq 0$.	CO1 L3	12M

OR

2	Solve the following problem by using Big-M-method Maximize $z = X_1+2X_2+3X_3-X_4$, subjected to : $X_1+2X_2+3X_3=15$, $2X_1+X_2+5X_3=20$, $X_1+2X_2+X_3+X_4= 10$ and $x_1, x_2, x_3, x_4 \geq 0$.	CO1 L3	12M

UNIT-II

3   A as salesman has visits of Five cities A,B,C,D and E the distance   CO2   L6   12M
between the five cities is as Follows. If the salesman starts from city A
and has to come back to his starting point, which route is should be
select So that the total distance travelled in minimum.

	A	B	C	D	E
A	-	7	6	8	4
B	7	-	8	5	6
C	6	8	-	9	7
D	8	5	9	-	8
E	4	6	7	8	-

OR

4   Find the minimum transportation cost for the following data   CO2   L1 L6   12M

		A	B	C	D	E	F	Available
Factory	1	9	12	9	6	9	10	5
	2	7	3	7	7	5	5	6
	3	6	5	9	11	3	11	2
	4	6	8	11	2	2	10	9
Requirement		4	4	6	2	4	2	

UNIT-III

5   a   Find the saddle point following GAME.   CO3   L1   6M

		Payer B		
		B₁	B₂	B₃
Player A	A₁	-3	-1	6
	A₂	2	0	2
	A₃	5	-2	-4

b   Solve the following GAME whose payoff matrix to the player A   CO3   L3   6M

		Payer B		
		B₁	B₂	B₃
Player A	A₁	1	7	2
	A₂	6	2	7
	A₃	5	2	6

OR

6   A TV repairman finds that time spent on his jobs has an exponential   **CO3**   **L1**   **12M**
distribution with mean 30 minutes. If he repairs sets in an order in which
they come in and if the arrival of set is approximately poison with an
average rate of 10 per 8- hour day, what is the repairman's Expected idle
time each day and how many jobs are ahead of the average set just
brought in.

UNIT-IV

7   A project has the following schedule. Construct PERT network &   **CO4**   **L1**   **12M**
compute the total float for each activity. Find critical path and its   **L6**
duration .Also calculate Total Float, Free Float

Activity	1-2	1-3	2-4	3-4	3-5	4-9	5-6
Time in weeks	4	1	1	1	6	5	4
Activity	5-7	6-8	7-8	8-9	8-10	9-10	
Time in weeks	8	1	2	1	8	7	

OR

8   Find the critical path and calculate the Total float , Free float   **CO4**   **L1**   **12M**
   L6
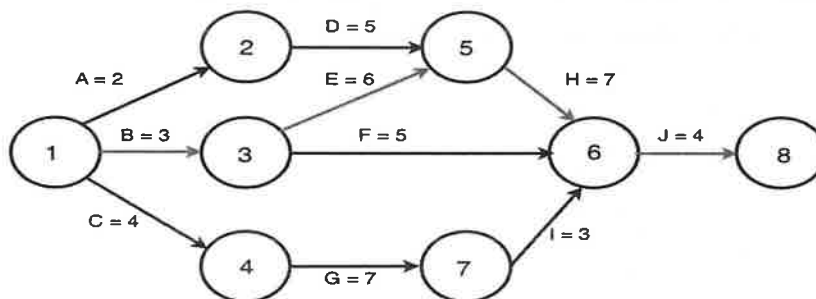
UNIT-V

9   Determine a sequence for Five jobs that will minimize the elapsed time   **CO4**   **L3**   **12M**
T and also calculate the total idle time for machines in this period.

Processing Time (hours)					
Job	1	2	3	4	5
Time for A	5	1	9	3	10
Time for B	2	6	7	8	4

OR

10   Assume that present value of one rupee to be spent in a years' time is   **CO5**   **L5**   **12M**
Re.0.90 and C=Rs 6000, Capital cost of equipment .Running costs are
given in the table below. When should the machine be replaced?

Year (n)	1	2	3	4	5	6	7
Running cost (MC) in Rs.	1000	1200	1600	2000	2600	3200	4000

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
WIRELESS COMMUNICATIONS
(Electronics & Communications Engineering)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Explain paging systems.	CO1	L2	6M
	b	Explain the impact of co-channel interference on the system capacity.	CO2	L2	6M

OR

2	a	How does subdividing a congested cell into smaller cells help to improve the coverage and capacity in cellular systems?	CO3	L3	6M
	b	For given path loss exponent (i) n=4 and (ii) n=3, find the frequency reuse factor and the cluster size that should be used for maximum capacity. The signal to interference ration of 15 dB is minimum required for satisfactory forward channel performance of a cellular system. There are six co-channel cells in the first tier, and all of them are at the same distance from the mobile. Use suitable approximations.	CO3	L4	6M

UNIT-II

3	a	Explain the ground reflection (two-ray) model. And derive the expression for total E-field envelope |ETOT|.	CO3	L2	6M
	b	Using the method of images, derive the path difference, phase difference, and path loss for the two ray model.	CO3	L3	6M

OR

4	a	Explain scattering in mobile radio environment.	CO3	L2	6M
	b	Explain radar cross section model.	CO3	L2	6M

UNIT-III

5	a	Describe small-scale multipath propagation.	CO2	L2	6M
	b	In the U.S. digital cellular system, if fc=900MHz and the mobile velocity is 70km/hr, calculate the received carrier frequency if the mobile (a)directly toward the transmitter (Positive Doppler shift), (b) directly away from the transmitter (Negative Doppler shift) and (c) in the direction perpendicular to the direction of the arrival of the transmitted signal.	CO3	L2	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	Derive the expression input covariance matrix for adaptive equalizer	CO1	L2	6M
	b	Rewrite the four matrix algebra rules used in the study of adaptive equalizers.	CO1	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 | Analyze the nonlinear effects in the frequency division multiple access (FDMA) scheme. | CO1 | L4 | 6M |
| | b | Find the intermodulation frequencies generated if a base station transmits two carrier frequencies at 1930 MHz and 1932 MHz that are amplified by a saturated clipping amplifier. If the mobile radio band is allocated from 1920 MHz to 1940 MHz, designate the IM frequencies that lie inside and outside the band. | CO5 | L4 | 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 ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
MATLAB PROGRAMMING
(Open Elective-IV)

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

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

UNIT-I

1	a	Explain the differences between local and global variables in MATLAB, including their scope, lifetime, and usage within functions and scripts.	CO1	L1	6M
	b	Explain various applications, advantages, and disadvantages of MATLAB.	CO1	L2	6M

OR

2	a	Write a MATLAB script to compute the volume of a sphere with a radius of 5 cm.	CO2	L3	6M
	b	Explain the purpose and functionality of the MATLAB help system, including its different components and how they can be used to obtain information and assistance.	CO1	L2	6M

UNIT-II

3	Explain the concept of element-wise operations in MATLAB for array addition, subtraction, and multiplication.	CO2	L2	12M

OR

4	Explain the characteristics and usage of cell arrays in MATLAB, including their structure, indexing, and storage of heterogeneous data.	CO3	L2	12M

UNIT-III

5	Apply the knowledge of user-defined functions to create a MATLAB program that sorts a given vector using MATLAB commands.	CO3	L3	12M

OR

6	a	Apply the knowledge of MATLAB functions to write a function that accurately computes the area and circumference of a circle given its radius.	CO4	L3	6M
	b	Discribe the process and methods involved in importing data from Excel files into MATLAB and exporting data from MATLAB to Excel files.	CO3	L2	6M

7 a Discuss the purpose and behavior of each relational operator in MATLAB, including how they compare operands and return logical (boolean) results. CO4 L2 6M

   b Explain the different methods used for calling functions in MATLAB programming language. CO4 L2 6M

OR

8 a Analyze the characteristics of plot and stem plots, discussing how they differ in terms of appearance, readability, and suitability for different types of data. CO4 L3 6M

   b Explain the purpose and capabilities of 3D plotting functions in MATLAB, including their ability to visualize data and functions in three-dimensional space. CO5 L2 6M

UNIT-V

9 a Write a MATLAB script file that solves a system of linear equations CO6 L3 6M

   $3x_1 + 2x_2 - 9x_3 = -65$

   $-9x_1 - 5x_2 + 2x_3 = 16$

   $6x_1 + 7x_2 + 3x_3 = 5$

   b Create a flowchart illustrating a program to solve linear equations, depicting the sequence of steps involved in the solution process. CO5 L2 6M

OR

10 a Dsicus the step-by-step procedure for solving ordinary differential equations (ODEs). CO6 L2 6M

    b Explain the conditions under which the left division method may encounter errors in MATLAB. CO5 L2 6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
APPLICATION OF ELECTRICAL POWER
(Open Elective – IV)

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

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

UNIT-I

1	**a**	Draw and explain the operation of sodium vapor lamp with neat diagram.	CO1	L2	6M
	b	Write short notes on incandescent lamp.	CO1	L2	6M

OR

2	**a**	State and explain laws of illumination briefly.	CO1	L2	6M
	b	A filament lamp of 300W is suspended at a height of 6.5 m above the working plane and gives uniform illumination over an area of 8 m diameter. Assuming an efficiency of the reflector as 60% and efficiency of lamp as 0.6 watt per candle power, determine the illumination on the working plane.	CO1	L3	6M

UNIT-II

3	**a**	Briefly discuss the method of Dielectric heating.	CO2	L2	6M
	b	A low frequency induction furnace whose secondary voltage is maintained constant at 20 volts, takes 500 kW at 0.8 pf, when the hearth is full. Assuming the resistance of the secondary to vary inversely as the height of the charge and reactance to remain constant, height up to which the hearth should be filled to obtain maximum heat.	CO2	L3	6M

OR

4	**a**	Explain with a neat sketch the principle of coreless type induction furnace.	CO2	L1	8M
	b	What are the causes of failure of heating element?	CO2	L2	4M

UNIT-III

5		Describe with neat sketch the various methods of electric resistance welding.	CO3	L2	12M

OR

6	**a**	Explain about flash welding with neat sketch.	CO3	L2	6M
	b	Discuss the advantages and disadvantages of welding.	CO3	L2	6M

UNIT-IV

7	**a**	What is electrolysis? Give advantages of using this processing method.	CO4	L2	6M
	b	What are the objectives of electroplating.	CO4	L1	6M

OR

8		Ii is required, to repair a worn out circular shaft 25 cm in diameter and 42 cm long bv coating it with a layer of 2.6 mm of nickel. Determine the theoretical quantity of electricity required and the time taken if the current density used is 210 A/m^2 . Electrochemical equivalent of nickel is $30.4 \times 10-8$ Kg/C of electricity and density of nickel is 8.9×103 Kg/m^3	CO4	L3	12M

9	a	How the electric traction system is classified? Briefly discuss.	CO5	L2	6M
	b	A train has schedule speed of 50 km/hr between the stops which are 8 km apart. Determine the crest speed over the run assuming trapezoidal speed time curve. The train accelerates at 3 km/hr/sec and retards at 4 km/hr/sec. Duration of stops is 50s.	CO5	L3	6M

OR

10	A train is to run between two stations 1.5 km apart at an average speed of 50 kmph, the run is to be made to a quadrilateral N-T curve. Maximum speed is to be limited to 54 kmph, acceleration, to 1 kmphps, coasting retardation to 0.16, and braking retardation to 3.2, Determine the duration of acceleration, coasting and braking periods.	CO5	L3	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
SUPPLY CHAIN MANAGEMENT
(Common to CE & AGE)

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

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

UNIT-I

1	a	What are the levels of Supply Chain Management and how they affect your business?	CO1	L3	6M
	b	Demonstrate understanding of distribution logistics.	CO1	L4	6M
		OR			
2	a	Explain the role of Supply Chain Management in Economy.	CO1	L5	6M
	b	What are the phases of evolution of the supply chain management?	CO1	L4	6M

UNIT-II

3	a	State how Supplier Selection process is done.	CO2	L1	6M
	b	How would you clarify supplier development?	CO2	L3	6M
		OR			
4	a	Distinguish between Market Vs Hierarchy with examples.	CO2	L2	6M
	b	Illustrate Market Vs Hierarchy system with the diagram and explain.	CO2	L2	6M

UNIT-III

5	a	State the Enablers/Drivers of Supply Chain Performance.	CO3	L1	6M
	b	Interpret in your own words the understanding of distribution logistics.	CO3	L2	6M
		OR			
6	a	State the Supply Chain Network optimization models.	CO3	L2	6M
	b	How would you explain about optimization model.	CO3	L1	6M

UNIT-IV

7	a	Explain about how to multiple item process is done for supply chain system.	CO4	L1	6M
	b	Do you think multi items management will help large industries.	CO4	L4	6M
		OR			
8	a	Define the following: i. Multiple location ii. Inventory managemen.	CO4	L1	6M
	b	How does IT sector will help organization in SCM?	CO4	L1	6M

UNIT-V

9	a	State how SC Restructuring process is done.	CO5	L2	6M
	b	Define the following: i) Agile Supply Chains ii) Restructuring.	CO5	L1	6M
		OR			
10	a	Define the following: i)Reverse Supply chain ii) IT in Supply Chain	CO5	L1	6M
	b	How would you test bullwhip effect?	CO5	L5	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
ENTREPRENEURSHIP DEVELOPMENT
(Common to CIC,CSM,CSE & CSIT)

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

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

UNIT-I

1	Compare and contrast the present scenario of entrepreneurship in India and abroad.	CO1	L3	12M

OR

2	Define social entrepreneurship. What are the risks and challenges that are faced by the social entrepreneurs?	CO1	L3	12M

UNIT-II

3	a	What is the Importance of small business in a developing country?	CO2	L3	6M
	b	Briefly explain classification of MSMEs.	CO2	L3	6M

OR

4	Briefly explain classification of MSMEs.	CO2	L1	12M

UNIT-III

5	a	Write short note on Trademark and Trade Secrets.	CO3	L3	6M
	b	Brief about Copy Rights and Patents.	CO3	L3	6M

OR

6	a	Discuss in detail about the Intellectual Property Rights (IPRs).	CO3	L2	6M
	b	Explain about E-commerce in business.	CO3	L3	6M

UNIT-IV

7	a	Identify the different phases of EDP.	CO4	L2	6M
	b	What is the scope of entrepreneurship development in India?	CO4	L1	6M

OR

8	a	What are the Opportunities for entrepreneurship in present scenario?	CO4	L1	6M
	b	What are the various sources of finance for entrepreneurs in India?	CO4	L2	6M

UNIT-V

9	a	How do you prepare project Report?	CO5	L4	6M
	b	List the areas that are covered in the feasibility study.	CO5	L1	6M

OR

10	a	Write about Financial requirements for preparation of Project.	CO5	L2	6M
	b	What is meant by Project preparation?	CO5	L1	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
WASTE RESOURCE MANAGEMENT
(Open Elective-IV)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Briefly explain the salient features of Indian legislation on managing and handling waste.	CO1	L3	6M
	b	Explain the Waste's impact on the environment.	CO1	L1	6M

OR

2	a	What are the main problems of waste management?	CO1	L1	6M
	b	Discuss the classification of Waste Minimization (WM) Techniques.	CO1	L2	6M

UNIT-II

3	a	Explain the Municipal solid Wastes and Industrial Solid Wastes.	CO2	L1	6M
	b	Illustrate the Agro wastes, Construction, and demolition Waste.	CO2	L2	6M

OR

4	a	Justify the areas where Threats are being attacked with example.	CO2	L4	6M
	b	State the key role of the public in solid waste management.	CO2	L3	6M

UNIT-III

5	a	Define biomedical waste.	CO3	L1	6M
	b	What do you understand by informed consent in the context of engineering as experimentation?	CO3	L1	6M

OR

6	a	What are the problems associated with the biomedical waste?	CO3	L1	6M
	b	List out the challenges and measures of biomedical waste during the COVID-19 pandemic.	CO3	L4	6M

UNIT-IV

7	a	Briefly write about corrosive waste and explosive waste with examples.	CO4	L1	6M
	b	Explain in detail the effect of why both low-risk and high-risk products are costly.	CO4	L2	6M

OR

8	a	What is a secure hazardous waste landfill?	CO4	L1	6M
	b	What are the laws and rules against hazardous waste dumping in India. How much hazardous waste is generated in India.	CO4	L3	6M

UNIT-V

9	a	Define waste collection, Discuss the waste collection methods .	CO5	L1	6M
	b	Give some Need for recycling of wastes.	CO5	L2	6M

OR

10	a	Define Waste sanitary. Explain the summary of waste sanitary landfill works.	CO5	L2	6M
	b	List out the environmental effects of landfill.	CO5	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
FIRE & SAFETY ENGINEERING
Open Elective (OE) – III

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

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

UNIT-I

1	Describe the different stages of a typical fire starting from a given fuel. Explain the differences in the growth stages of a liquid or gaseous hydrocarbon fire as compared with a fire involving solid fuel like wood or paper.	CO1	L1	12M

OR

2	Describe the different stages of a typical fire starting from a given fuel. Explain the differences in the growth stages of a liquid or gaseous hydrocarbon fire as compared with a fire involving solid fuel like wood or paper.	CO1	L2	12M

UNIT-II

3	a	Discuss the term head loss in a flow through pipes and classify them.	CO2	L2	6M
	b	Write an equation for head loss due to friction.	CO2	L3	6M

OR

4	Explain the procedure to finf flash point & fire point of a fuel.	CO2	L2	12M

UNIT-III

5	Explain the procedure to conduct TUNNEL TEST to identify the sample materials category.	CO3	L3	12M

OR

6	What are the considerations in designing escape route and refuge in different scenarios during fire in a building?	CO4	L4	12M

UNIT-IV

7	Classify heat detectors and Explain the working of any one type heat detectors used for fire identification.	CO5	L4	12M

OR

8	Describe the working of bimetallic element heat detectors used for fire identification with neat sketch.	CO5	L4	12M

UNIT-V

9	What are the different ways in which water as an extinguisher medium is delivered from extinguishers?	CO5	L4	12M

OR

10	Classify and explain the purpose of the primary components of a hydrant system.	CO6	L3	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
ELEMENTS OF ROAD TRAFFIC SAFETY
Open Elective (OE) – III

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

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

UNIT-I

1	Analyze the various road geometric design elements and how they are related to cause Road accidents.	CO1	L3	12M

OR

2	How results are interpreted on road accidents in various countries. List the fatality rates from different countries.	CO1	L1	12M

UNIT-II

3	Explain the various aspects which are indicated in regulation of vehicles.	CO2	L2	12M

OR

4	Explain about the various rules adopted in concern to traffic for cyclist and pedestrians.	CO2	L2	12M

UNIT-III

5	a	Explain the concept of centre lines with neat sketch.	CO3	L2	6M
	b	What is meant by pedestrian crossings and explain it with neat sketch?	CO3	L1	6M

OR

6	a	Explain briefly about tunnel lighting?	CO3	L2	6M
	b	Write in detail about lighting at bends.	CO3	L1	6M

UNIT-IV

7	Give a detailed discussion about the different types of traffic signs.	CO4	L2	12M

OR

8	Discuss about Informatory signs and Route marker signs with neat sketch.	CO4	L2	12M

UNIT-V

9	a	What is meant by Signal Face, explain it with neat sketch?	CO5	L2	6M
	b	Explain the concept of illumination of signals with specifications.	CO5	L1	6M

OR

10	a	Why co-ordination of signals is needed?	CO5	L2	6M
	b	Briefly explain the different types of co-ordinate signal system.	CO5	L1	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
POWER SYSTEMS PROTECTION
(Electrical and Electronics Engineering)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1		Discuss the operating principle of SF6 circuit breaker, what are its advantages over other types of circuit breakers and for what voltage range it is recommended.	CO1	L1	12M

OR

2		Explain the terms recovery voltage, restriking voltage and RRRV. Derive an expression for restriking voltage in terms of system capacitance and inductance.	CO1	L3	12M

UNIT-II

3	a	What are the different types of distance relays? Compare their merits and demerits.	CO3	L1	6M
	b	Discuss the principle of operation of induction cup relay with relevant diagram.	CO3	L1	6M

OR

4		Explain working of microprocessor based over current relay with suitable diagram.	CO3	L2	12M

UNIT-III

5		Explain the significance for the protection of transformers and explain the Buchholz relay protection with neat block diagram.	CO4	L1	12M

OR

6	a	Describe the protection of the stator windings of 3-phase alternator against turn-to-turn faults.	CO4	L1	6M
	b	Calculate the required value of neutral resistance for a 3-phase 11kv alternator so as to protect 70% of the winding against earth-fault by a relay with pick-up current of 1A. The neutral CT has a ratio of 250/5.	CO4	L3	6M

UNIT-IV

7		Describe the principle of bus-bar protection based on voltage differential systems. How does it Overcome the problems of saturation of CT's?	CO5	L1	12M

OR

8		Explain about the over current protection of bus bars with relevant connection diagram	CO5	L1	12M

UNIT-V

9		What are the causes of over voltages arising on power system? Why is it necessary to protect the lines and other equipment of the power system against over voltages ?	CO6	L1	12M

OR

10	a	Explain the differences between equipment grounding and system grounding?	CO6	L1	6M
	b	Discuss the advantages and disadvantages of overhead ground wires.	CO6	L3	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
BIG DATA
(Common to CSM & CSE)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

1	a	List out the challenges faced by big data.	CO1	L1	6M
	b	Examine the Significance of big data analytics.	CO1	L3	6M

OR

2	a	Discriminate the Big Data in Healthcare, Transportation & Medicine.	CO1	L5	6M
	b	Why organizations using big data for competitive advantage?	CO1	L4	6M

UNIT-II

3	a	Describe the dataflow process in Hadoop Distributed file System.	CO2	L3	6M
	b	Analyze the features of Apache Hadoop.	CO2	L4	6M

OR

4		Determine the basic commands in Hadoop command line interface.	CO2	L3	12M

UNIT-III

5	a	Discuss different types of failures in Classic MapReduce.	CO3	L2	6M
	b	List out the different types of failures in Yet Another Resource Negotiator.	CO3	L1	6M

OR

6		Justify types of output formats in MapReduce.	CO4	L5	12M

UNIT-IV

7		Examine the different execution modes available in Pig.	CO4	L3	12M

OR

8	a	Discriminate the Structures, Statements in Pig Latin.	CO1	L4	6M
	b	Evaluate Data Processing Operators in Pig Latin.	CO4	L5	6M

UNIT-V

9	a	Draw a neat sketch of Hive architecture.	CO2	L3	6M
	b	Explain about components of Hive architecture.	CO2	L2	6M

OR

10		Explain with a neat diagram the architecture of Hbase.	CO2	L2	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
DESIGN & DRAWING OF IRRIGATION STRUCTURES
(Civil Engineering)

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

Answer any ONE of the following two questions

1	Design a Tank sluice with tower head for the data given below	CO3 L4 60M

Ayacut to be irrigated : 200 ha
Duty : 1000 ha/cumec
Top width of the tank bund : 2 m with 2:1 side slopes
The top level of bank : +40.00
The ground level at the site : +34.50
Hard soil for foundation : +33.50
The sill of the sluice at off take : +34.00
The maximum water level of the tank : +38.00
The Full tank level : +37.00
Average low water level of the tank : +35.00
The channel bed level : +34.00
Full supply level : +34.50
Bed width : 1.25 m
Side slopes of channel : 1.5 to 1 with top of
bank at +35.50
Draw the Following:
1) Half plan at top & half plan at foundation level
2) Longitudinal section through the barrel

OR

2	Design a syphon aqueduct Type – III for the following data:	CO5 L4 60M

Canal :
Discharge : 35 m3/s
Bed width : 20.00m
Bed level : +40.00
Full supply level : +42.00
Ultimate bed level : +39.75
Ultimate full supply level : +42.50
Average velocity in the canal : 0.83m/s
Left bank top width : 5.00
Right bank top width : 2.00
Canal side slopes both inside and outside : 2:1
Top of canal bank : +43.50
Drain:
Catchment area : 8.0km2
Maximum computed discharge : 60 m3/s
Maximum flood level of the drain at the side crossing: +39.75 (observed)
Average bed level of the drain at the site crossing : +38.00
Hard soil is available at : +37.00
Draw the Following:
1) Half plan at top & half plan at foundation level
2) Longitudinal section through the barrel

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
COMPUTER NETWORKS
(Computer Science & Information Technology)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	Write about various Network topologies.	CO1	L4	12M
	OR			
2	Explain in detail about OSI reference model.	CO1	L2	12M

UNIT-II

3	a	Write about the services provided by the Data link layer.	CO2	L4	6M
	b	Classify the Data Link Layer Design Issues.	CO2	L3	6M
		OR			
4	a	Explain briefly about error detection in data link layer.	CO2	L2	6M
	b	Justify what are the error correction techniques used in data link layer.	CO2	L6	6M

UNIT-III

5		What are the network layer design issues explain them.	CO3	L2	12M
		OR			
6	a	Explain distance vector routing algorithm.	CO3	L2	6M
	b	Briefly state what is count to infinity problem.	CO3	L3	6M

UNIT-IV

7	Explain about the elements of transport layer.	CO4	L2	12M
	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 ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
MOBILE APPLICATION DEVELOPMENT
(Common to CSE & CSM)

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

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

UNIT-I

1	a	Explain UI widgets in android.	CO1	L2	6M
	b	Explain Dalvik Virtual Machine.	CO1	L2	6M

OR

2	Explain Eclipse and steps to install eclipse IDE Explain with pros and cons.	CO1	L2	12M

UNIT-II

3	a	Identify the views Time Picker in android.	CO2	L3	6M
	b	Explain the Following Date Picker.	CO2	L2	6M

OR

4	a	Categorize the following List View in android.	CO2	L4	6M
	b	Categorize the following Image View in android.	CO2	L4	6M

UNIT-III

5	What is Content Provider? What are the Operations supported by a Content Provider?	CO3	L1	12M

OR

6	How will you Implement Two Text View are added in the activity, one for heading and one to display the stored data in a content provider.	CO3	L1	12M

UNIT-IV

7	Discuss about Threading concept.	CO4	L2	12M

OR

8	Analyze how to Publishing your application on the Android Market.	CO4	L4	12M

UNIT-V

9	How the multitask scheduling can be done using Background agent and classify the agents level.	CO5	L1	12M

OR

10	Design and Illustrate the display of maps with landmarks and location.	CO6	L3	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
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	L1	6M
	b	Discuss the applications of ANN.	CO1	L2	6M

OR

2	a	Explain the basic architecture of McCulloch – Pitts neuron model.	CO1	L2	6M
	b	What is generalization? Explain.	CO1	L2	6M

UNIT-II

3	a	Give the perceptron weight updating rule and the learning algorithm	CO2	L3	6M
	b	Explain the learning factors in Back propagation Algorithm.	CO2	L2	6M

OR

4	a	Derive the equation for weight change for discrete perceptron network.	CO2	L3	6M
	b	List the advantages and disadvantages of BPA.	CO2	L2	6M

UNIT-III

5	a	Describe about Bidirectional Associative Memory with its architecture.	CO3	L2	6M
	b	With example, explain how to calculate Hamming Distance.	CO3	L2	6M

OR

6	a	Write an Algorithm to store and recall of BAM.	CO3	L3	6M
	b	What are the applications of pattern recognition.	CO4	L2	6M

UNIT-IV

7	a	Give the properties of fuzzy sets.	CO5	L2	6M
	b	Explain Cartesian product on fuzzy sets.	CO5	L2	6M

OR

8	a	Define membership function. What are the membership functions used in fuzzy designing?	CO5	L1	6M
	b	Compare and contrast Fuzzy vs Crisp.	CO5	L2	6M

UNIT-V

9	a	What are the advantages of fuzzy logic control?	CO6	L1	6M
	b	Discuss any one fuzzy logic application in electrical engineering.	CO6	L2	6M

OR

10	a	What are the basic building blocks in fuzzy logic ?	CO6	L1	6M
	b	With an example, discuss Centre of Sums defuzzification method.	CO6	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
DIGITAL WATERMARKING
CSE (Internet of Things and Cyber security Including Block Chain Technology)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Define Watermarking? List out properties of watermarking	CO1	L1	6M
	b	Explain the process of Information hiding. List out four categories of Information Hiding.	CO1	L2	6M

OR

2	a	How to evaluate watermarking systems.	CO1	L2	6M
	b	Explain briefly how digital watermarking is used in owner identification	CO1	L2	6M

UNIT-II

3	a	Define False Positive Errors? Briefly explain models used to detect false positive errors.	CO2	L1	6M
	b	Explain Embedding as an optimization Problem	CO2	L2	6M

OR

4	a	Describe Signal and Channel Models in side channel watermarking	CO2	L2	6M
	b	Explain briefly optimizing with respect to a Detection Statistic Method.	CO2	L2	6M

UNIT-III

5	a	Define Perceptual Models? Briefly explain Automated Evaluation.	CO3	L1	6M
	b	Discuss Spread spectrum coding.	CO3	L2	6M

OR

6	a	How to evaluate Perceptual impact of Watermarks.	CO3	L2	6M
	b	Explain Frequency Sensitivity and Loudness Sensitivity.	CO3	L2	6M

UNIT-IV

7	a	Define Embedded Redundancy? Briefly explain.	CO5	L1	6M
	b	Discuss Self-Embedding.	CO5	L2	6M

OR

8	a	Explain Fragile Watermarks.	CO4	L5	6M
	b	Explain Fragile Watermarks and Telltale Watermarks.	CO4	L2	6M

UNIT-V

9	a	Define Model-Based Steganography? Briefly explain.	CO6	L1	6M
	b	Discuss Masking Embedding as Natural Processing.	CO6	L2	6M

OR

10	a	Explain Matrix Embedding.	CO6	L2	6M
	b	Explain Nonshared Selection Rule.	CO6	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
HYDROLOGY,GROUND WATER & WELL ENGINEERING
(Agricultural Engineering)

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

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

UNIT-I

1		Write the different methods of presentation of rainfall data with suitable diagram?	CO1	L3	12M

OR

2	a	Explain thiessen polygon method with one example.	CO1	L2	6M
	b	Explain mass curve and hyetograph.	CO1	L5	6M

UNIT-II

3		Explain the factors affecting hydrograph with necessary graphs.	CO2	L2	12M

OR

4	a	Explain the conversion of unit graph duration by s-curve method.	CO2	L5	6M
	b	Explain the concept of synthetic unit hydrograph.	CO2	L2	6M

UNIT-III

5		What are the properties of aquifer and explain them in brief.	CO3	L1	12M

OR

6		In an unconfined aquifer extending over 4 km2 , the water table was initially at 26 m below the ground surface. Sometime after an irrigation of 20 cm (full irrigation), the water table rises to a depth of 25.5 m below the ground surface. Afterward 1.5x106 m3 of groundwater was withdrawn from this aquifer, which lowered the water table to 27.5 m below the ground surface. Determine: (i) specific yield of the aquifer, and (ii) soil moisture deficit (SMD) before irrigation.	CO3	L4	12M

UNIT-IV

7	a	Mention the groundwater exploration techniques.	CO4	L2	6M
	b	Explain the steady flow to cavity wells with neat diagrams.	CO4	L5	6M

OR

8	a	Describe the four possible approaches for installing well screen and casing in place.	CO4	L2	8M
	b	Name the methods used for development of wells.	CO4	L1	4M

UNIT-V

9	a	Mention the different artificial recharge techniques.	CO5	L1	6M
	b	Classify the types of indigenous pumps.	CO5	L3	6M

OR

10	a	Define the terminology with expression: water horse power, shaft horse power, break horse power, input horse power.	CO5	L1	6M
	b	Define priming and explain in detail about air lift pumps.	CO5	L1	6M

*** END ***

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

B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
MODERN MACHINING METHODS
(Mechanical Engineering)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Explain the need and characteristics for Modern Machining Methods.	CO1	L2	6M
	b	What are the advantages, disadvantages and applications of Non-Traditional Machining Methods.	CO1	L1	6M

OR

2	a	List out the Machining techniques and write a short note need for MRR in Industrial sectors.	CO1	L1	6M
	b	What are the advantages, disadvantages and applications of MRR.	CO1	L1	6M

UNIT-II

3	a	With a neat sketch, explain the working of a Wire Electrical Discharge Machining Process (WEDM).	CO1	L1	6M
	b	Explain the working principle of wire cut EDM.	CO2	L2	6M

OR

4	a	What are the functions of dielectric fluid in EDM (Electrical Discharge Machining).	CO2	L3	6M
	b	What is flushing, and explain any two methods of flushing in the EDM process.	CO2	L3	6M

UNIT-III

5	a	Explain the working principle of Electro Chemical Machining (ECM) process.	CO3	L5	6M
	b	List out the major techniques used in the Chemical machining process.	CO3	L2	6M

OR

6	a	Write short note on electrolytes used in Electro Chemical Machining (ECM).	CO3	L1	6M
	b	Discuss the surface finish, accuracy and economic aspects of Electro Chemical Machining (ECM).	CO3	L1	6M

UNIT-IV

7	a	Explain the parts of Laser Beam Machining (LBM) briefly.	CO4	L1	6M
	b	Write the advantages, disadvantages, applications of Plasma Arc Machining (PAM).	CO4	L1	6M

OR

8	a	Differentiate between Ion Beam Machining and Electron Beam Machining.	CO4	L2	6M
	b	Write the advantages, disadvantages, and applications of Ion Beam Machining.	CO4	L2	6M

UNIT-V

9	a	Discuss about the Micro Fabrication Technique-Doping.	CO5	L2	6M
	b	Write a short note on doping technique of Sol-gel method.	CO5	L1	6M

OR

10	a	Explain the types of micro fabrication techniques used in Industrial sectors.	CO6	L2	6M
	b	Discuss briefly about the its advantages, disadvantages and applications of Scanning Probe Microscopy.	CO6	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. IV Year I Semester Supplementary Examinations July/August-2024
VLSI DESIGN
(Electronics & Communications Engineering)

Time: 3 Hours
Max. Marks: 60

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

UNIT-I

1	a	Determine the relationship between Ids & Vds in non-saturated region.	CO2	L3	6M
	b	Explain in detail about Transconductance.	CO2	L2	6M

OR

2	a	Define output conductance and figure of merit.	CO2	L1	6M
	b	Show the circuit diagram of BiCMOS inverter and explain its operation.	CO2	L4	6M

UNIT-II

3	a	Explain 2μm design rules for contacts and transistors.	CO3	L3	6M
	b	Sketch the layout diagram for CMOS inverter.	CO3	L3	6M

OR

4	a	Illustrate stick diagram of AND-OR-INVERTER in CMOS design Style.	CO3	L2	6M
	b	Explain about Implant and demarcation line in stick diagrams with neat sketches.	CO3	L2	6M

UNIT-III

5	a	Explain the criteria for choice of layers.	CO6	L2	6M
	b	Explain about complex logic gates.	CO4	L2	6M

OR

6	a	What design methods are used in physical design cycle? Explain each term with suitable diagrams.	CO4	L1	6M
	b	What is routing? Explain about different routing techniques.	CO4	L2	6M

UNIT-IV

7		Summarize the following. (i) Unsigned magnitude comparator. (ii) Asynchronous Counters	CO4	L2	12M

OR

8	a	Construct and explain the circuit diagram of 4-bit Ripple Carry Adder.	L3	CO4	4M
	b	Construct and explain the ripple counter.	L3	CO4	4M
	c	Explain about 4 transistor Dynamic memory cell.	L2	CO4	4M

UNIT-V

9	a	What is FPGA. Draw and explain basic structure of FPGA.	L1	CO5	6M
	b	Discuss about the Fault coverage and how to find it.	L2	CO5	6M

OR

10	a	What is testing? Explain any three test principles.	L1	CO5	6M
	b	What is controllability and observability? Give examples to explain it.	L2	CO5	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
UTILIZATION OF ELECTRICAL ENERGY
(Electrical & Electronics Engineering)

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

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

UNIT-I

1	a	If a lamp of 200 cp is placed 1m below a plane mirror which reflects 90% of light falling on it, determine illumination at a point 3m away from the foot of the lamp which is hung 4m above ground.	CO1	L3	6M
	b	Explain with sketch the principle and operation of incandescent lamp and enumerates its advantages and disadvantages.	CO1	L1	6M

OR

2		State the laws of illumination. Explain the laws with the help of suitable diagrams and derive an equation of the same.	CO1	L1	12M

UNIT-II

3	a	Describe direct and indirect core type furnace with neat sketches.	CO2	L2	6M
	b	Explain application of induction heating.	CO2	L3	6M

OR

4	a	Briefly discuss the method of Dielectric heating used in the electric heating.	CO2	L2	6M
	b	Briefly discuss the applications of resistance heating.	CO2	L2	6M

UNIT-III

5	a	What is the Classification of Electrical Drives.	CO3	L2	6M
	b	What are the advantages and disadvantages of Electric drives.	CO3	L3	6M

OR

6	a	How do you select a motor for an industrial application.	CO3	L2	6M
	b	What are the different Industrial motor load types? Explain.	CO3	L3	6M

UNIT-IV

7	a	Compare A.C traction with D.C traction with necessary examples.	CO4	L2	6M
	b	Explain about the different methods of electric braking systems in the case of traction.	CO4	L3	6M

OR

8	a	What are the special features of traction motors.	CO4	L3	4M
	b	A goods trains weighing 300 tonnes is to be hauled by a locomotive up a gradient of 2% with an acceleration of 1 kmph/s. Coefficient of adhesion is 20%. Track resistance = 45 W/Ton and effect of rotational masses is 15% of dead weight. If axle load is not to exceed by 20 tonnes, determine the weight of locomotive and number of axles.	CO4	L3	8M

UNIT-V

9		Explain the calculations of tractive effort required for train propulsion.	CO5	L2	12M

OR

10		An electric train has an average speed of 42 km/hr on a level track between stops 1400 m apart. It is accelerated at 1.7 km/hr/sec and it is braked at 3.3 km/hr/sec. Draw the speed-time curve and estimate the specific energy consumption. Assume tractive resistance as 50 NW/Tone and allow 10% rotational inertia.	CO5	L3	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
FOOD QUALITY AND CONTROL
(Agricultural Engineering)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Explain microscopic method of quality control.	L3	CO1	6M
	b	Explain subjective method of quality determination.	L3	CO1	6M

OR

2	a	What is physiological and commercial maturity of food material?	L1	CO1	6M
	b	Brief about quality control in pasteurised milk.	L2	CO1	6M

UNIT-II

3	What are the requirements for conducting sensory evaluation?	L3	CO2	12M

OR

4	Explain steps involved in inspecting critical control point for canned fruit in syrup.	L3	CO2	12M

UNIT-III

5	a	Write the advantages and disadvantages of instrumental analysis in quality control.	L2	CO3	6M
	b	Brief about descriptive flavour profile method analysis.	L2	CO3	6M

OR

6	a	Explain quantitative sensitive analysis.	L3	CO3	6M
	b	List the attributes of food product and consumer during analysis.	L3	CO3	6M

UNIT-IV

7	Explain indetail about the legislation related to food safety.	L3	CO4	12M

OR

8	a	List out the information obtained from the consumer studies.	L3	CO4	6M
	b	Explain methods of approach in developing questionnaires.	L1	CO4	6M

UNIT-V

9	Explain BIS and AGMARK in brief.	L3	CO5	12M

OR

10	a	Write standard specifications for processed products prepared by fruits and vegetables.	L3	CO5	8M
	b	What are the benefits of HACCP?	L2	CO5	4M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
POWER PLANT ENGINEERING
(Mechanical Engineering)

Time: 3 Hours   Max. Marks: 60

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

UNIT-I

1	a	Discuss about the sources of energy.	CO1	L2	6M
	b	State the advantages and disadvantages of power plants.	CO1	L1	6M

OR

2	Discuss about the harmful effects of greenhouse gases.	CO1	L2	12M

UNIT-II

3	a	Illustrate the working of a chain grate stoker.	CO2	L2	6M
	b	Describe about underfeed fuel bed.	CO2	L2	6M

OR

4	Explain about cyclone furnace, its design and construction.	CO2	L2	12M

UNIT-III

5	Explain the working of a diesel power plant with a neat sketch.	CO3	L2	12M

OR

6	a	Compare a closed cycle gas turbines with open cycle gas turbine.	CO3	L4	6M
	b	Explain the process of reheating and regeneration.	CO3	L2	6M

UNIT-IV

7	Discuss the concept of Hydropower and Explain Hydrological cycle with a neat sketch.	CO4	L2	12M

OR

8	a	Classify Hydroelectric power plants.	CO4	L4	6M
	b	Compare base load plant with peak load plant.	CO4	L4	6M

UNIT-V

9	a	Discuss true chain reaction.	CO5	L2	6M
	b	Explain nuclear fission process.	CO5	L2	6M

OR

10	Discuss sodium-graphite reactor with a line diagram.	CO5	L2	12M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
DIGITAL IMAGE PROCESSING
(Electronics and Communications Engineering)

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

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

UNIT-I

1	a	State the purpose of the image processing. List out the fundamental steps in digital image processing which can be applied to images.	CO1	L1	6M
	b	Define image processing. Illustrate example fields of its usage.	CO1	L2	6M

OR

2	a	Compute the array product and matrix product for the following two images and comment the result. $A = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -2 \\ -2 & 2 \end{bmatrix}$	CO1	L3	6M
	b	Explain the Array versus Matrix operations on digital images with relevant equations.	CO1	L3	6M

UNIT-II

3	a	Discuss the properties of Unitary transforms.	CO2	L2	6M
	b	Define 1D and 2D – Discrete Fourier Transform with equations.	CO2	L1	6M

OR

4	a	Define Haar transform and give the algorithm and flowchart to compute Haar basis.	CO2	L1	6M
	b	Compute Haar transform for the given image. $f(x,y) = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$	CO2	L3	6M

UNIT-III

5	a	Define image enhancement and point operations in image enhancement.	CO3	L1	6M
	b	Illustrate the contrast stretching in image enhancement with suitable example.	CO3	L2	6M

OR

6	a	Write brief notes on CMY and CMYK color models.	CO3	L1	6M
	b	Explain the method of converting colors from RGB to HSI.	CO3	L2	6M

UNIT-IV

7	a	Draw the degradation/restoration model in image processing and describe the each part presented on it.	CO4	L1	6M
	b	Differentiate the Image Enhancement and Image Restoration.	CO4	L4	6M

OR

8	a	Discuss the Laplacian operator in edge detection. Also mention its drawbacks.	CO5	L2	6M
	b	Discuss the concept of Laplacian of Gaussian (LoG) operator for edge detection.	CO5	L2	6M

UNIT-V

9	a	Discuss the Objective fidelity criteria and subjective fidelity criteria with suitable example.	CO6	L2	6M
	b	Compare zero-memory source and Markov or finite memory source.	CO6	L2	6M

OR

10	a	Explain the procedure for Arithmetic coding with suitable example.	CO6	L2	6M
	b	Summarize the procedure of Bit plane coding with suitable example.	CO6	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
DIGITAL IMAGE PROCESSING
(Electronics and Communications Engineering)

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

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

UNIT-I

1	a	State the purpose of the image processing. List out the fundamental steps in digital image processing which can be applied to images.	CO1	L1	6M
	b	Define image processing. Illustrate example fields of its usage.	CO1	L2	6M

OR

2	a	Compute the array product and matrix product for the following two images and comment the result. $A = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -2 \\ -2 & 2 \end{bmatrix}$	CO1	L3	6M
	b	Explain the Array versus Matrix operations on digital images with relevant equations.	CO1	L3	6M

UNIT-II

3	a	Discuss the properties of Unitary transforms.	CO2	L2	6M
	b	Define 1D and 2D – Discrete Fourier Transform with equations.	CO2	L1	6M

OR

4	a	Define Haar transform and give the algorithm and flowchart to compute Haar basis.	CO2	L1	6M
	b	Compute Haar transform for the given image. $f(x,y) = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$	CO2	L3	6M

UNIT-III

5	a	Define image enhancement and point operations in image enhancement.	CO3	L1	6M
	b	Illustrate the contrast stretching in image enhancement with suitable example.	CO3	L2	6M

OR

6	a	Write brief notes on CMY and CMYK color models.	CO3	L1	6M
	b	Explain the method of converting colors from RGB to HSI.	CO3	L2	6M

UNIT-IV

7	a	Draw the degradation/restoration model in image processing and describe the each part presented on it.	CO4	L1	6M
	b	Differentiate the Image Enhancement and Image Restoration.	CO4	L4	6M

OR

8	a	Discuss the Laplacian operator in edge detection. Also mention its drawbacks.	CO5	L2	6M
	b	Discuss the concept of Laplacian of Gaussian (LoG) operator for edge detection.	CO5	L2	6M

UNIT-V

9	a	Discuss the Objective fidelity criteria and subjective fidelity criteria with suitable example.	CO6	L2	6M
	b	Compare zero-memory source and Markov or finite memory source.	CO6	L2	6M

OR

10	a	Explain the procedure for Arithmetic coding with suitable example.	CO6	L2	6M
	b	Summarize the procedure of Bit plane coding with suitable example.	CO6	L2	6M

*** END ***

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech IV Year I Semester Supplementary Examinations July/August-2024
SOFTWARE PROJECT MANAGEMENT
(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

1	What is the importance of software project management and explain different activities methodologies, setting objectives covered by software project management?	CO1	L2	12M

OR

2	Explain briefly strategic program management.	CO1	L2	12M

UNIT-II

3	Explain various approaches involved in Agile Methods of process model.	CO2	L2	12M

OR

4	Explain in brief bottom-up and top-down approaches in software effort estimation.	CO2	L2	12M

UNIT-III

5	Illustrate different activity based approaches involved in Activity Planning.	CO3	L2	12M

OR

6	Explain seven categories of the nature of resources. How can you identify resource requirements in producing a project.	CO4	L2	12M

UNIT-IV

7	Explain Creation of Framework for Project Management and Control.	CO5	L2	12M

OR

8	Explain about Software Configuration Management Control in detail.	CO5	L2	12M

UNIT-V

9	Explain the organizational Behavior of staffing in software projects.	CO6	L2	12M

OR

10	Illustrate the Communication Genres with simple examples.	CO6	L2	12M

*** END ***