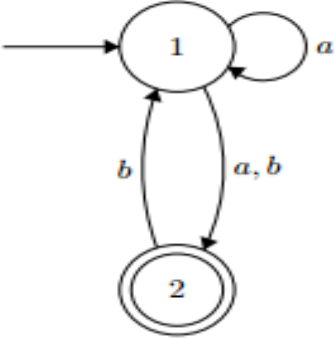


Course Code: B20CB3101					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B. Tech.I Semester MODEL QUESTION PAPER					
COMPILER DESIGN					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Write about phases of compiler in detail for the statement $x = a + b * c * d$	1	2	7
	b).	convert the given NFA to DFA and draw transition diagram of it 	1	2	7
Estd. 1980			OR AUTONOMOUS		
2.	a).	Explain different Input Buffering methods.	1	2	7
	b).	Write about Language Processors & its functionality.	1	2	7
UNIT-II					
3.	a).	Check the given grammar is ambiguous or not $E \rightarrow E + E / E * E / (E) / a / b$	2	2	7
	b).	Explain the rules to calculate first & follow. Calculate the first & follow for given grammar symbols. $EE + E / E * E / (E) / a / bc$	2	2	7
OR					
4.	a).	Construct about LR(0) item set for the given grammar $S \rightarrow AB, A \rightarrow aaA \mid \epsilon, B \rightarrow Bb \mid \epsilon$	2	2	7
	b).	Implement CLR parser for the given grammar $S \rightarrow AB, A \rightarrow aaA \mid \epsilon, B \rightarrow Bb \mid \epsilon$	2	3	7
UNIT-III					
5.	a).	Explain evaluation Orders for SDD's	3	2	7
	b).	Construct the SDD tree for the given expression evaluation $X = (a + b) * c * d - (x + g)$	3	2	7

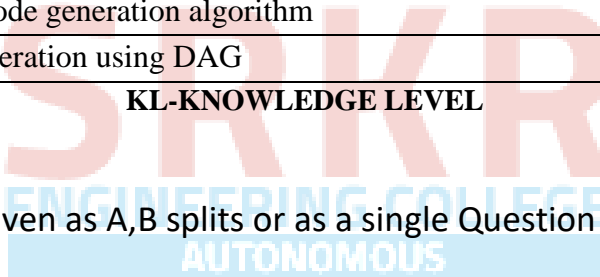
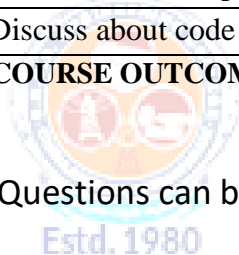
6.	a).	Describe about syntax tree & dag representation of intermediate code.	3	2	7
	b).	Explain intermediate code for while loop & for loop.	3	3	7
		UNIT-IV			
7.	a).	Discuss about flow graph analysis	4	2	7
	b).	Discuss the principal sources of optimization	4	2	7
		OR			
8.	a).	Write about heap & stack run time storage methods.	4	3	7
	b).	How to implement peep hole optimization and list out methods used in it	4	3	7
		UNIT-V			
9.	a).	Discuss about Issues in the Design of a Code Generator	5	3	7
	b.)	Describe Register Allocation and Assignment strategy.	5	3	7
		OR			
10.	a).	Discuss about simple code generation algorithm	5	3	7
	b).	Discuss about code generation using DAG	5	3	7

CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code B20CB3102					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)				R20	
III B.Tech. I Semester MODEL QUESTION PAPER					
COMPUTER NETWORKS					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT -I					
1	a)	Explain different LAN topologies?	1	K2	7
	b)	Explain TCP/IP Protocol suite.	1	K2	7
OR					
2	a)	Describe Guided Media in physical layer	1	K2	7
	b)	Compare and contrast OSI and TCP/IP layered protocol architecture	1	K3	7
UNIT -II					
3	a)	For the given data 1100101011000101 divide the data into K sections (K=4) each of nbits(n=4) and find the checksum at Senders side and check for Errors at the Destination side.	2	K3	7
	b)	For the given data 1001 find the hamming code with even parity, Do error correction at the Destination side by modifying a single bit.	2	K3	7
OR					
4	a)	Taking 4 bits to be allocated to identify the sequence number in the header part of the frame. Explain how Slidingwindow work for Go back N protocol.(Find the window size and range of Sequence numbers)	2	K3	7
	b)	For the given data Frame 1101011011 and generate code X^4+X+1 . Find the transmitted Frame to the Destination using CRC.	2	K3	7
UNIT -III					
5	a)	Explain how CSMA works and modified to detect collision.	3	K2	7
	b)	Explain methods for Controlled Access on a network.	3	K2	7
OR					
6	a)	Explain 802.15 architecture and layers.	3	K2	7
	b)	Define Multiple Access? Explain FDMA and CDMA.	3	K2	7
UNIT -IV					
7	a)	Explain about IPV6 header format with neat sketch.	4	K2	7
	b)	With an example explain the distance vector routing algorithms used	4	K2	7

		in computer network			
		OR			
8	a)	Explain the operation of DHCP	4	K2	7
	b)	Explain different classes in class full addressing and write range of IP address for each class.	4	K3	7
		UNIT -V			
9	a)	Explain TCP header with a neat diagram.	5	K3	7
	b)	Explain congestion control in TCP.	5	K3	7
		OR			
10	a)	Explain HTTP transaction.	5	K2	7
	b)	Explain need for DNS? How DNS resolver performs resolution.	5	K2	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A, B splits or as a single Question for 14 marks



Course Code: B20CB3103					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. I Semester MODEL QUESTION PAPER					
FUNDAMENTALS OF DIGITAL MARKETING					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain about Digital Marketing and its Evolution?	1	2	8
	b).	Debate on the creation of Internet Business Models?	1	3	6
OR					
2.	a).	Differentiate between Traditional and Modern Marketing?	1	3	7
	b).	Write about Applications of Digital Marketing?	1	3	7
UNIT-II					
3.	a).	Discuss about Display Advertising Media?	2	3	7
	b).	Elaborate CPC Vs CPM	2	3	7
OR					
4.	a).	Explain Fixed Cost/Sponsorship type of Display Advertising.	2	3	7
	b).	Differentiate between CPL Vs CPA	2	3	7
UNIT-III					
5.	a).	What is Search Advertising and Why is it important?	3	3	7
	b).	Write about Search Engine Optimization?	3	3	7
OR					
6.		Explain various steps in detail regarding Ad Placements?	3	3	14
UNIT-IV					
7.	a).	Write about Social Media Marketing and its importance?	4	3	7
	b).	Write about Social Media Marketing on Twitter?	4	3	7
OR					
8.	a).	How is Social Media Marketing done on LinkedIn and Instagram? Explain.	4	3	7
	b).	Explain various steps in building a successful social media marketing strategy?	4	2	7

UNIT-V					
9.		Write short notes on Emerging Trends in Digital Marketing.	5	3	14
OR					
10.		Write short notes on SoLoMo and Hyperlocal Marketing.	5	3	14
CO-COURSE OUTCOME		KL-KNOWLEDGE LEVEL	M-MARKS		

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3104					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. I Semester MODEL QUESTION PAPER					
MARKETING RESEARCH & MARKETING MANAGEMENT					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks :70		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT - I					
1.	a).	What is Marketing? Elucidate in brief its Nature and Importance of Marketing.	1	3	7
	b).	Define Marketing? Explain the Functions of Marketing	1	2	7
OR					
2.	a).	Briefly explain the Concept of Marketing	1	2	7
	b).	Define Market Segmentation? Explain the Factors influencing Marketing Environment.	1	3	7
UNIT - II					
3.	a).	What is meant by Marketing Research? Discuss about the scope and Importance of Marketing Research	2	2	7
	b).	Define Marketing Research? Explain Marketing Information system	2	2	7
OR					
4.	a).	What are the qualities required for Marketing Research Manager	2	3	7
	b).	Write about Concept of Marketing Research? Explain the difference between Marketing Research and Marketing Management.	2	2	7
UNIT - III					
5.	a).	Critically Examine to formulate the Research problem	3	3	7
	b).	Define Data? Discuss about determining Sources of data	3	2	7
OR					
6.	a).	Determining Sample Design and Sampling Size	3	3	7
	b).	What is meant by Research? Preparing the Research Report.	3	2	7
UNIT - IV					
7.	a).	Define Marketing Mix? Explain the Characteristics and element of Marketing Mix.	4	2	7
	b).	Critically Examine Various Stages of Product Life Cycle.	4	3	7

OR					
8.	a).	Write about the Importance of Pricing. Explain the Pricing Methods	4	2	7
	b).	What are the Objects of pricing? Discuss about the Pricing Strategies	4	3	7
UNIT - V					
9.	a).	What is a channel of Distribution? Explain the functions of channels of Distribution.	4	2	7
	b).	Explain about the factors influencing choice of Channel	4	3	7
OR					
10.	a).	Define Promotion? Explain the concept of Promotion Mix	4	2	7
	b).	Critically Examine the factors affecting the Promotion Mix elements.	4	3	7

CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



III B.Tech. I Semester MODEL QUESTION PAPER

FINANCIALS & COST ACCOUNTING

Computer Science & Business Systems

Time: 3 Hrs.

Max. Marks: 70 M

Answer ONE Question from EACH UNIT

All questions carry equal marks

Assume suitable data if necessary

			CO	KL	M																														
UNIT-I																																			
1.	a).	Explain about the Accounting Cycle & Accounting Equation	1	2	7																														
	b).	Discuss the advantages of Accounting; also explain the limitation of accounting.	1	3	7																														
OR																																			
2.		Explain in detail about GAAP?	1	2	14																														
UNIT-II																																			
3.	a).	What do you mean by Trial Balance? Discuss the Main objects & limitations	2	2	7																														
	b).	Journalize the following in the books of Mr. Smith: 2010 April 11 Goods purchase from Ram for Rs. 12,000 trade discount @ 10% April 13 Above, goods sold to sham at original price less 3% trade discount. April 15 ¼ of the total goods returned by sham. April 16 Goods received back from Sham returned to Ram.	2	3	7																														
OR																																			
4.	a).	From these balances and information given, prepare his trading, profit and loss account and balance sheet. Trial balance as on 31st March, 2012	2	3	14																														
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Name of the Account</th> <th style="width: 25%;">Debit (Rs.)</th> <th style="width: 25%;">Credit (Rs.)</th> </tr> </thead> <tbody> <tr> <td>Drawings</td> <td>3,500</td> <td></td> </tr> <tr> <td>Building</td> <td>6,000</td> <td></td> </tr> <tr> <td>Debtors and Creditors</td> <td>5,000</td> <td>8,000</td> </tr> <tr> <td>Purchases and Sales</td> <td>30,000</td> <td>46,500</td> </tr> <tr> <td>Sales return and Purchase Return</td> <td>350</td> <td>290</td> </tr> <tr> <td>Discount</td> <td>710</td> <td></td> </tr> <tr> <td>Insurance</td> <td>300</td> <td></td> </tr> <tr> <td>Cash</td> <td>3,000</td> <td></td> </tr> <tr> <td>Stock</td> <td>1,200</td> <td></td> </tr> </tbody> </table>				Name of the Account	Debit (Rs.)	Credit (Rs.)	Drawings	3,500		Building	6,000		Debtors and Creditors	5,000	8,000	Purchases and Sales	30,000	46,500	Sales return and Purchase Return	350	290	Discount	710		Insurance	300		Cash	3,000		Stock	1,200	
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Stock	1,200																																		

		Bad debts	500				
		Carriage	630				
		Wages	2770				
		Machinery	20000				
		Furniture	6000				
		Salaries	3300				
		Bank charges	200				
		Bill receivable and payable	6000	4000			
		Trade charges	830	31500			
		Capital	90290	90290			
		UNIT-III					
5.		Explain in detail about Inventory Valuation Methods			3	2	14
		OR					
6.		Discuss in detail about Goodwill Valuation Methods			3	2	14
		UNIT-IV					
7.	a).	Explain the difference between Financial Accounting, Cost Accounting and Management Accounting			4	3	7
	b).	Discuss the importance of the following cost classifications a) Direct vs. Indirect cost b) Fixed vs. Variable c) Implicit vs. Explicit cost			4	2	7
		OR					
8.	a).	What is meant by allocation and apportionment of Overhead?			4	2	7
	b).	Explain about Activity Based Costing			4	2	7
		UNIT-V					
9.	a).	What are all the costing methods? Explain the difference between unit costing and job costing			4	2	7
	b).	Explain the Cost Sheet format			4	2	7
		OR					
10.	a).	Discuss about the treatment in the case of abnormal losses and normal losses			4	2	7
	b).	Explain about the Process costing			4	2	7

III B.Tech. I Semester MODEL QUESTION PAPER

SOFTWARE ENGINEERING

Computer Science & Business Systems

Time: 3 hrs

Max. Marks :70

Answer **ONE Question** from **EACH UNIT**

All questions carry equal marks

Assume suitable data if necessary

			CO	KL	M
UNIT - I					
1.	a).	Illustrate spiral model with neat diagram.	1	3	7
	b).	Illustrate unified process.	1	3	7
OR					
2.	a).	Categorize process assessment and improvement.	1	3	7
	b).	Interpret software myths.	1	3	7
UNIT - II					
3.	a).	Illustrate Extreme Programming (XP).	2	3	7
	b).	Interpret any 3 agile process models.	2	3	7
OR					
4.	a).	Classify the characteristics of negotiating requirements and validating requirements.	2	3	7
	b).	Interpret a tool set for the agile process	2	3	7
UNIT - III					
5.	a).	Identify the relationships in class diagram for online shopping .	3	4	7
	b).	Design the complete use case model for the following system Vehicle Insurance Renewal System	3	4	7
OR					
6.	a).	Interpret requirements modeling strategies.	3	3	7
	b).	Illustrate interaction diagrams with an example.	3	3	7
UNIT - IV					
7.	a).	Categorize the concepts of design.	4	3	7
	b).	Interpret design within the Context of Software Engineering	4	3	7
OR					
8.	a).	Illustrate Architectural Styles.	4	3	7
	b).	Interpret designing class based components.	4	3	7

		UNIT - V			
9.	a).	Categorize Testing Strategies for object oriented software.	5	3	7
	b).	Interpret the art of debugging.	5	3	7
		OR			
10.	a).	Interpret white-box testing and black-box testing with one example.	5	3	7
	b).	Interpret internal and external views of testing.	5	3	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3107					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. I Semester MODEL QUESTION PAPER					
ARTIFICIAL INTELLIGENCE					
Computer Science & Business Systems					
Time: 3 hrs.			Max. Marks :70		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1	a)	Explain Foundations of Artificial Intelligence?	1	2	7
	b)	What is “Artificial Intelligence and Artificial Intelligence Technique”? Briefly explain how AI Technique can be represented and list out some of the task domain of AI.	1	3	7
OR					
2	a)	What are the applications of Artificial Intelligence?	1	3	7
	b)	Explain the implementation of Tic-Tac-Toe game approaches.	1	3	7
UNIT-II					
3	a)	Show how the steepest accent hill climbing works?	2	3	7
	b)	How to define a problem as state space search? Discuss it with the help of an example.	2	3	7
OR					
4	a)	Illustrate in detail about the constraint satisfaction procedure with example?	2	3	7
	b)	Describe alpha beta pruning procedure	2	3	7
UNIT-III					
5	a)	Define Propositional calculus. Explain its Operators.	3	3	7
	b)	Differentiate propositional & predicate logic	3	3	7
OR					
6	a)	List some of the rules of Axiomatic system.	3	2	7
	b)	Explain Semantic Tableau system	3	2	7
UNIT-IV					
7	a)	Describe the Issues in knowledge representation.	4	3	7
	b)	How do you represent visiting a restaurant in the form of a Script? Explain	4	3	7

		OR			
8	a)	Write the significance of using CYC in capturing human commonsense database.	4	3	7
	b)	Discuss the procedure to represent knowledge using Semantic Network.	4	3	7
		UNIT-V			
9	a)	What is Expert system? Explain its Phases.	5	3	7
	b)	Explain Fuzzy sets with example.	5	3	7
		OR			
10	a)	What is Uncertainty Measure? Explain briefly.	5	3	7
	b)	Explain about inference rules for fuzzy propositions	5	3	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



III B.Tech. I Semester MODEL QUESTION PAPER

COMPUTER GRAPHICS

Computer Science & Business Systems

Time: 3 hrs.

Max. Marks :70

Answer **ONE Question** from **EACH UNIT**

All questions carry equal marks

Assume suitable data if necessary

			CO	KL	M
UNIT -1					
1	a)	What is the role of digital to analog converter (DAC)? Where is it placed in video display devices?	1	2	6
	b)	Explain Raster scan system with neat block diagram.	1	2	8
OR					
2	a)	Explain different application areas of computer graphics.	1	2	8
	b)	Discuss briefly different work station and input devices used in graphic systems.	1	3	6
UNIT -II					
3	a)	Discuss about the basic transformations on object.	2	2	6
	b)	Derive transformation matrix for successive rotations and successive scaling.	2	2	8
OR					
4	a)	Write and explain Bresenham's line drawing algorithm.	2	2	8
	b)	Discuss about reflection & shearing	2	2	6
UNIT -III					
5	a)	Explain with an example for Sutherland-Hodgeman Polygon clipping algorithm.	3	3	8
	b)	Write short notes on 2D viewing pipe line	3	2	6
OR					
6	a)	Derive transformation matrix for window to viewport transformation.	3	3	6
	b)	Explain with an example for Cohen-Sutherland Line clipping algorithm.	3	2	8
UNIT -IV					
7	a)	Explain about different shading models.	4	2	8
	b)	Write short notes on Quadric surfaces.	4	2	6
OR					
8	a)	Derive transformation matrix for Cubic Bezier curves.	4	3	7

	b)	Explain a method to add texture and shades to objects.	4	3	7
		UNIT -V			
9	a)	Write short notes on computer Animation.	5	3	7
	b)	How can you generate motion in animation? Explain.	5	2	7
		OR			
10	a)	Explain back – face detection algorithm	5	3	7
	b)	Explain different 3D transformations	5	2	7

CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE: Questions can be given as A, B splits or as a single Question for 14 marks



III B.Tech. II Semester MODEL QUESTION PAPER

OPERATIONS RESEARCH

Computer Science & Business Systems

Time: 3 Hrs.

Marks: 70 M

Answer **ONE Question** from **EACH UNIT**

All questions carry equal marks

Assume suitable data if necessary

			CO	KL	M																														
		UNIT-I																																	
1.	Suppose an industry is manufacturing two types of products P1 and P2. The profits per Kg of the two products are Rs.30 and Rs.40 respectively. These two products require processing in three types of machines. The following table shows the available machine hours per day and the time required on each machine to produce one Kg of P1 and P2. Formulate the problem in the form of linear programming model and solve it by Graphical Method.	<table border="1"> <thead> <tr> <th>Profit/Kg</th> <th>P1 Rs.30</th> <th>P2 Rs.40</th> <th>Total available Machine hours/day</th> </tr> </thead> <tbody> <tr> <td>Machine 1</td> <td>3</td> <td>2</td> <td>600</td> </tr> <tr> <td>Machine 2</td> <td>3</td> <td>5</td> <td>800</td> </tr> <tr> <td>Machine 3</td> <td>5</td> <td>6</td> <td>1100</td> </tr> </tbody> </table>	Profit/Kg	P1 Rs.30	P2 Rs.40	Total available Machine hours/day	Machine 1	3	2	600	Machine 2	3	5	800	Machine 3	5	6	1100	1	3	14														
Profit/Kg	P1 Rs.30	P2 Rs.40	Total available Machine hours/day																																
Machine 1	3	2	600																																
Machine 2	3	5	800																																
Machine 3	5	6	1100																																
		OR																																	
2.	Find the solution of the following LPP: Maximize $z = 3x_1 + 2x_2 + 2x_3$ subject to $x_1 + x_2 + 2x_3 \leq 38$ $2x_1 + x_2 + x_3 \geq 24$ with $x_1 \geq 0, x_2 \geq 0, x_3 \geq 0$		1	3	14																														
		UNIT-II																																	
3.	Solve the following transportation problem.	<table border="1"> <thead> <tr> <th>Destination → Origin ↓</th> <th>D₁</th> <th>D₂</th> <th>D₃</th> <th>D₄</th> <th>Supply</th> </tr> </thead> <tbody> <tr> <td>O₁</td> <td>5</td> <td>3</td> <td>6</td> <td>2</td> <td>19</td> </tr> <tr> <td>O₂</td> <td>4</td> <td>7</td> <td>9</td> <td>1</td> <td>37</td> </tr> <tr> <td>O₃</td> <td>3</td> <td>4</td> <td>7</td> <td>5</td> <td>34</td> </tr> <tr> <td>Demand</td> <td>16</td> <td>18</td> <td>31</td> <td>25</td> <td>90</td> </tr> </tbody> </table>	Destination → Origin ↓	D ₁	D ₂	D ₃	D ₄	Supply	O ₁	5	3	6	2	19	O ₂	4	7	9	1	37	O ₃	3	4	7	5	34	Demand	16	18	31	25	90	2	3	14
Destination → Origin ↓	D ₁	D ₂	D ₃	D ₄	Supply																														
O ₁	5	3	6	2	19																														
O ₂	4	7	9	1	37																														
O ₃	3	4	7	5	34																														
Demand	16	18	31	25	90																														
		OR																																	
4.	Consider the problem of assigning five jobs to five persons. The assignment costs are given as follows. Determine the optimum assignment schedule.		2	3	14																														

		Job <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: right;">Person</td> <td style="border: 1px solid black;">A</td> <td style="border: 1px solid black;">8</td> <td style="border: 1px solid black;">4</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">6</td> <td style="border: 1px solid black;">1</td> </tr> <tr> <td></td> <td style="border: 1px solid black;">B</td> <td style="border: 1px solid black;">0</td> <td style="border: 1px solid black;">9</td> <td style="border: 1px solid black;">5</td> <td style="border: 1px solid black;">5</td> <td style="border: 1px solid black;">4</td> </tr> <tr> <td></td> <td style="border: 1px solid black;">C</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">8</td> <td style="border: 1px solid black;">9</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">6</td> </tr> <tr> <td></td> <td style="border: 1px solid black;">D</td> <td style="border: 1px solid black;">4</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">0</td> <td style="border: 1px solid black;">3</td> </tr> <tr> <td></td> <td style="border: 1px solid black;">E</td> <td style="border: 1px solid black;">9</td> <td style="border: 1px solid black;">5</td> <td style="border: 1px solid black;">8</td> <td style="border: 1px solid black;">9</td> <td style="border: 1px solid black;">5</td> </tr> </table>		1	2	3	4	5	Person	A	8	4	2	6	1		B	0	9	5	5	4		C	3	8	9	2	6		D	4	3	1	0	3		E	9	5	8	9	5			
	1	2	3	4	5																																									
Person	A	8	4	2	6	1																																								
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	C	3	8	9	2	6																																								
	D	4	3	1	0	3																																								
	E	9	5	8	9	5																																								
		UNIT-III																																												
5.	Find the sequence that minimizes the total time required in performing the following jobs on three machines in order ABC. Processing times (in hours) are given in the following table :	<table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">Job</td> <td style="text-align: center;">:</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: right;">Machine A</td> <td style="text-align: center;">:</td> <td style="text-align: center;">8</td> <td style="text-align: center;">10</td> <td style="text-align: center;">6</td> <td style="text-align: center;">7</td> <td style="text-align: center;">11</td> </tr> <tr> <td style="text-align: right;">Machine B</td> <td style="text-align: center;">:</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: right;">Machine C</td> <td style="text-align: center;">:</td> <td style="text-align: center;">4</td> <td style="text-align: center;">9</td> <td style="text-align: center;">8</td> <td style="text-align: center;">6</td> <td style="text-align: center;">5</td> </tr> </table>	Job	:	1	2	3	4	5	Machine A	:	8	10	6	7	11	Machine B	:	5	6	2	3	4	Machine C	:	4	9	8	6	5	3	3	14													
Job	:	1	2	3	4	5																																								
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Machine B	:	5	6	2	3	4																																								
Machine C	:	4	9	8	6	5																																								
		OR																																												
6.	<p>An auto parts supplier sells Hardy-brand batteries to car dealers and auto mechanics. The annual demand is approximately 1,200 batteries. The supplier pays \$28 for each battery and estimates that the annual holding cost is 30 percent of the battery's value. It costs approximately \$20 to place an order (managerial and clerical costs). The supplier currently orders 100 batteries Per month.</p> <ol style="list-style-type: none"> a. Determine the ordering, holding and total inventory costs for the current order quantity. b. Determine the economic order quantity (EOQ). c. How many orders will be placed per year using the EOQ? d. Determine the ordering, holding, and total inventory costs for the EOQ? e. How has ordering cost changed? Holding cost? Total inventory cost? 	3	3	14																																										
		UNIT-IV																																												
7.	Solve the following 6x2 game graphically.		4	3	14																																									

$$\begin{pmatrix} 1 & -3 \\ 3 & 5 \\ -1 & 6 \\ 4 & 1 \\ 2 & 2 \\ -5 & 0 \end{pmatrix}$$

OR

8.	<p>A machine owner find, from his past records the cost per year of maintaining a machine whose purchase price is Rs. 6000 are as follows</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Year</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">5</th> <th style="text-align: center;">6</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Maintenance cost</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">1200</td> <td style="text-align: center;">1400</td> <td style="text-align: center;">1800</td> <td style="text-align: center;">2300</td> <td style="text-align: center;">2800</td> </tr> <tr> <td style="text-align: left;">Resale value</td> <td style="text-align: center;">3000</td> <td style="text-align: center;">1500</td> <td style="text-align: center;">750</td> <td style="text-align: center;">375</td> <td style="text-align: center;">200</td> <td style="text-align: center;">200</td> </tr> </tbody> </table> <p>Determine at what age replacement is done.</p>	Year	1	2	3	4	5	6	Maintenance cost	1000	1200	1400	1800	2300	2800	Resale value	3000	1500	750	375	200	200	4	3	14
Year	1	2	3	4	5	6																			
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Resale value	3000	1500	750	375	200	200																			

UNIT-V

9.	<p>The following are the time estimates and the precedence relationships of the activities in a project network:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Activity</th> <th style="text-align: center;">A</th> <th style="text-align: center;">B</th> <th style="text-align: center;">C</th> <th style="text-align: center;">D</th> <th style="text-align: center;">E</th> <th style="text-align: center;">F</th> <th style="text-align: center;">G</th> <th style="text-align: center;">H</th> <th style="text-align: center;">I</th> <th style="text-align: center;">J</th> <th style="text-align: center;">K</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Predecessor activity</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">E</td> <td style="text-align: center;">D</td> <td style="text-align: center;">F,G</td> <td style="text-align: center;">H,I</td> </tr> <tr> <td style="text-align: left;">Timeestimate (weeks)</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7</td> <td style="text-align: center;">3</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">7</td> <td style="text-align: center;">6</td> <td style="text-align: center;">10</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> </tr> </tbody> </table> <p>Draw the project network diagram. Determine the critical path, the project completion time, Total float, Free float and Independent float.</p>	Activity	A	B	C	D	E	F	G	H	I	J	K	Predecessor activity	-	-	-	A	B	B	C	E	D	F,G	H,I	Timeestimate (weeks)	4	7	3	6	4	7	6	10	3	4	2	5	3	14
Activity	A	B	C	D	E	F	G	H	I	J	K																													
Predecessor activity	-	-	-	A	B	B	C	E	D	F,G	H,I																													
Timeestimate (weeks)	4	7	3	6	4	7	6	10	3	4	2																													

OR

10.	<p>The time estimates (in weeks) and other characteristics of a project are given below.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Activity</th> <th style="text-align: center;">1-2</th> <th style="text-align: center;">1-6</th> <th style="text-align: center;">2-3</th> <th style="text-align: center;">2-4</th> <th style="text-align: center;">3-5</th> <th style="text-align: center;">4-5</th> <th style="text-align: center;">6-7</th> <th style="text-align: center;">5-8</th> <th style="text-align: center;">7-8</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Optimistic time</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">8</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: left;">Most likely time</td> <td style="text-align: center;">6</td> <td style="text-align: center;">5</td> <td style="text-align: center;">12</td> <td style="text-align: center;">5</td> <td style="text-align: center;">11</td> <td style="text-align: center;">7</td> <td style="text-align: center;">9</td> <td style="text-align: center;">4</td> <td style="text-align: center;">16</td> </tr> <tr> <td style="text-align: left;">Pessimistic time</td> <td style="text-align: center;">9</td> <td style="text-align: center;">8</td> <td style="text-align: center;">18</td> <td style="text-align: center;">6</td> <td style="text-align: center;">14</td> <td style="text-align: center;">11</td> <td style="text-align: center;">15</td> <td style="text-align: center;">6</td> <td style="text-align: center;">18</td> </tr> </tbody> </table> <p>Determine (i) Critical path (ii) Expected to complete the project and also prepare activity schedule.</p>	Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8	Optimistic time	3	2	6	4	8	3	3	2	8	Most likely time	6	5	12	5	11	7	9	4	16	Pessimistic time	9	8	18	6	14	11	15	6	18	5	3	14
Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8																																			
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CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks

Course Code: B20CB3202					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. II Semester MODEL QUESTION PAPER					
MACHINE LEARNING					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain about Types of Machine Learning Systems?	1	2	8
	b).	Illustrate the following: 1) Artificial Intelligence 2) Machine Learning 3) Deep learning	1	3	6
OR					
2.	a).	Differentiate between Supervised and Unsupervised Learning?	1	3	7
	b).	Write about Sampling distribution of an estimator?	1	3	7
UNIT-II					
3.	a).	Discuss about various steps to construct the decision tree model.	2	3	7
	b).	Elaborate Naive Bayes probabilistic model for categorical data with an example?	2	3	7
OR					
4.	a).	Explain types of Regression?	2	3	7
	b).	Differentiate between the One-Versus-One and One-versus-Rest methods for multi class classification using binary classification?	2	3	7
UNIT-III					
5.	a).	Write about Ensemble Learning. Justify bagging with Random Forest algorithm with an example?	3	3	7
	b).	Write about Voting Classifiers?	3	3	7
OR					
6.	a).	Explain how Support Vector Machine can be used for classification of linearly separable data.	3	3	14
UNIT-IV					
7.	a).	Write about K-Means algorithm with an example?	4	3	7
	b).	Write about Clustering for Semi-Supervised Learning?	4	3	7
OR					

8.	a).	What is meant by Dimensionality reduction? Apply PCA to reduce the dimensionality reduction.	4	3	7
	b).	Explain the concept of learning hidden layer representations	4	2	7
		UNIT-V			
9.	a).	Write short notes on Implementation of MLP with Keras.	5	3	14
		OR			
10.	a).	Write short notes on Loading and Preprocessing Data with Tensor Flow.	5	3	14
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3203					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)				R20	
III B.Tech. II Semester MODEL QUESTION PAPER					
DATA SCIENCE					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain Linear algebra with Numpy ?	1	2	7
	b).	Build in detail about Data Science process with necessary examples.	1	2	7
OR					
2.	a).	Explain Required steps of data science .	1	2	7
	b).	Explain Arrays and vectorized computation using NumPy with example.	1	2	7
UNIT-II					
3.	a).	How many types of files in data science? Explain each with examples .	2	2	7
	b).	Explain Correlation and covariance with examples.	2	2	7
OR					
4.	a).	Explain Data loading, Storage using pandas.	2	2	7
	b).	Make a pandas Data Frame with two-dimensional list using python .	2	3	7
UNIT-III					
5.	a).	Is a regular expression important for data science? What are the applications of regular expression?	3	2	7
	b).	Explain about Data Wrangling and uses of data wrangling.	3	2	7
OR					
6.	a).	What is data Cleaning and preparation? Explain different types of data cleaning techniques with examples.	3	2	7
	b).	Apply a methods join, Combine and reshape - Hierarchical indexing using student sample data.	3	3	7
UNIT-IV					
7.	a).	Define Data Visualization what are the benefits of data visualization.	4	2	7
	b).	Explain Data aggregation and Group operations Group By	4	2	7

		mechanics.			
		OR			
8.	a).	Apply Different types of plots with examples.	4	3	7
	b).	How can we visualize more than three dimensions of data in a single chart?	4	3	7
		UNIT-V			
9.	a).	What is resampling and describe the methods of Down sampling, up sampling with examples	5	3	7
	b).	Describe the various tools used to represent the time data types	5	3	7
		OR			
10.	a).	Describe various applications of time series data and list out the basics of time series data	5	3	7
	b).	Explain the various methods for Moving window functions	5	3	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3204					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)				R20	
III B.Tech. II Semester MODEL QUESTION PAPER					
DISTRIBUTED OPERATING SYSTEMS					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain briefly the design issues of a distributed system.	1	2	8
	b).	Explain various choices of addressing, blocking in Client-Server communication.	1	2	6
OR					
2.	a).	Explain briefly various implementation issues of RPC.	1	2	8
	b).	Discuss the semantics of RPC in the presence of failure.	1	2	6
UNIT-II					
3.	a).	Explain Centralized and Distributed algorithms to implement mutual exclusion in distributed systems.	2	2	7
	b).	Explain about logical clocks and Lamport's algorithm.	2	2	7
OR					
4.	a).	Explain Bully and Ring algorithms to elect coordinator process.	2	2	7
	b).	Explain briefly distributed dead lock prevention strategies..	2	2	7
UNIT-III					
5.	a).	Explain the issues concerned with architecture and functionality of Threads packages.	3	2	7
	b).	Explain the Work station model to organize multiple processors in a distributed system.	3	2	7
OR					
6.	a).	Explain briefly any two processor allocation algorithms.	3	2	8
	b).	Explain briefly the design issues for processor allocation.	3	2	6
UNIT-IV					
7.	a).	Explain briefly about semantics of file sharing in a distributed system.	4	2	6
	b).	Discuss several ways how file and directory servers are organized internally.	4	2	8

		OR			
8.	a).	Discuss protocols to update multiple copies of a file in a distributed system..	4	2	8
	b).	What do you mean by lossless join decomposition and dependency preserving decomposition? Write down the tests for the same.	4	2	6
		UNIT-V			
9.	a).	Discuss write-through cache consistency protocol followed in bus-based multiprocessor.	5	2	6
	b).	Explain the working of Ring based multiprocessors.	5	2	8
		OR			
10.	a).	Explain briefly strict and sequential memory consistency models.	5	2	7
	b).	Explain the protocol to achieve sequential consistency in Page based DSM.	5	2	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3205					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. II Semester MODEL QUESTION PAPER					
MODERN WEB APPLICATIONS					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain about XML and JSON with example?	1	2	4
	b).	Explain Three Tier Model with neat diagram	1	2	10
OR					
2.	a).	What are tags and attributes in HTML? Explain about URL	1	2	4
	b).	Explain about Service Oriented Architectures with neat diagram	1	2	10
UNIT-II					
3.	a).	Create a simple HTML page which demonstrates the use of the various types of lists. Try adding a definition list which uses an unordered list to define terms.	2	2	7
	b).	Show how group and alignment of table rows and columns is achieved using HTML.	2	2	7
OR					
4.	a).	Compare and contrast HTML and DHTML.	2	2	7
	b).	Create a registration form with following fields 1) username 2) password 3) gender 4) date of birth 5) Aadhaar number	2	2	7
UNIT-III					
5.	a).	Explain the different CSS properties that can be applied to List.	3	2	7
	b).	Explain the different ways of specifying the selectors with examples?	3	2	7
OR					
6.	a).	Explain the various ways you can reference a colour in CSS.	3	2	7
	b).	Explain different types of CSS with examples?	3	2	7
UNIT-IV					
7.	a).	Write a java script to validate a form consisting of a username. Also navigate to another web page after validation.	4	3	7
	b).	Write a java script to know sum of even number from 1 to 100.	4	3	7

OR					
8.	a).	Explain Built in objects in JavaScript	4	2	7
	b).	Write a java script to determine whether a given number is an 'ARMSTRONG NUMBER' or not. [Eg: 153 is an Armstrong number, since sum of the cube of the digits is equal to the number i.e., $13 + 53 + 33 = 153$]	4	3	7
UNIT-V					
9.	a).	What are the advantages and disadvantages of Ajax? What are all the technologies used by Ajax? Explain.	5	2	7
	b).	Explain Angular JS Form Controllers with an example	5	2	7
OR					
10.	a).	Explain about responsive UI? List any five bootstrap class that make table as responsive	5	2	7
	b).	Explain directives and events in angular JS with example	5	2	7

CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3206					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. II Semester MODEL QUESTION PAPER					
MOBILE COMPUTING					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain the challenges in mobile communication.	1	2	7
	b).	Describe in detail about structure of a mobile computing application.	1	2	7
OR					
2.	a).	Define mobile computing. Explain about different types of communication.	1	2	7
	b).	Discuss about mobile computing and wireless communication in contrast.	1	2	7
UNIT-II					
3.	a).	Discuss about the typical steps for handover and classify the types of handovers.	2	2	7
	b).	Describe in detail about the system architecture of GSM.	2	2	7
OR					
4.	a).	Elucidate in detail about how GPRS networks replace circuit switch services on second generation GSM communication. Explain its services and operation briefly.	2	2	7
	b).	Explain with a diagram the steps involved in a mobile terminated call (a station calling a mobile station) in GSM.	2	K2	7
UNIT-III					
5.	a).	Explain about the Code Division Multiple Access in detail.	3	4	7
	b).	Analyze the hidden and exposed terminals in detail.	3	4	7
OR					
6.	a).	Relate IEEE 802.11 in wireless communication.	3	4	7
	b).	Distinguish merits and demerits of SDMA, TDMA and FDMA.	3	4	7
UNIT-IV					
7.	a).	Relate location management, registration, tunneling and encapsulation in mobile networks.	4	4	7
	b).	Give an overview of classical enhancements to TCP for mobility.	4	4	7

		OR			
8.	a).	Explain the usage of selective retransmission in TCP in mobile networks.	4	4	7
	b).	Discuss in detail about conventional TCP/IP protocols.	4	4	7
		UNIT-V			
9.	a).	Discuss in detail about different caching techniques.	5	2	7
	b).	Explain about transactional models in detail.	5	2	7
		OR			
10.	a).	Explain in detail about communications asymmetry with proper example.	5	2	7
	b).	Discuss about data dissemination in mobile networks.	5	2	7
		CO-COURSE OUTCOME	KL-KNOWLEDGE LEVEL	M-MARKS	

NOTE: Questions can be given as A,B splits or as a single Question for 14 marks



Course Code: B20CB3207					
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					R20
III B.Tech. II Semester MODEL QUESTION PAPER					
ROBOTICS AND EMBEDDED SYSTEMS					
Computer Science & Business Systems					
Time: 3 Hrs.			Max. Marks: 70 M		
Answer ONE Question from EACH UNIT					
All questions carry equal marks					
Assume suitable data if necessary					
			CO	KL	M
UNIT-I					
1.	a).	Explain the Embedded systems and General computing system.	1	2	7
	b).	Explain about Purpose of Embedded systems.	1	2	7
OR					
2.	a).	Illustrate the purpose of embedded systems. Core of embedded system.	1	4	7
	b).	Explain Hardware architecture of the real time systems.	1	2	7
UNIT-II					
3.	a).	What are the various I/O types, serial and parallel communication devices, wireless communication devices.	2	3	7
	b).	Explain about timer and counting devices, watchdog timer, real time clock.	2	3	7
OR					
4.	a).	Explain serial bus communication protocols, parallel communication network using ISA, PCI, PCT-X.	2	3	7
	b).	Explain about Internet embedded system network protocols, USB, Bluetooth.	2	3	7
UNIT-III					
5.	a).	Fundamental issues in Hardware software co-design, Unified Modelling Language (UML).	3	4	7
	b).	Explain about Hardware Software trade-offs DFG model.	3	2	7
OR					
6.	a).	Explain the state machine programming model.	3	3	7
	b).	What are the various model for multiprocessor system?	3	3	7
UNIT-IV					
7.	a).	Explain the Task communication of RTOS, Shared memory and pipes.	4	2	7

	b).	Explain about message passing, message queue, mailbox, signalling, RPC.	4	3	7
		OR			
8.	a).	Explain about various Mobile phones, RFID, WISENET, Robotics, Biomedical Applications.	4	3	7
	b).	Brain machine interface etc. Popular microcontrollers.	4	3	7
		UNIT-V			
9.	a).	Explain the Elements of robots -- joints, links, actuators, and sensors.	5	2	7
	b).	Explain about Kinematics of serial robots, Kinematics of parallel robots Motion planning and control.	5	2	7
		OR			
10.	a).	Explain about Sensing distance and direction, Line Following Algorithms.	5	2	7
	b).	Explain about Feedback Systems, Other topics on advance robotic techniques.	5	4	7

CO-COURSE OUTCOME

KL-KNOWLEDGE LEVEL

M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 14 marks

