					Course Code:B23AD3101
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		FUNDAMENTALS OF DATA MINING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	List out various major issues to consider in the task of data mining.	**1**	**1**	**2**
	b).	List out the steps involved in the process of knowledge discovery.	**1**	**1**	**2**
	c).	Apply min-max normalization and map age value of 35 in the range [25,75] to the range [0.0,1.0]	**2**	**3**	**2**
	d).	Apply cosine similarity to find the similarity between following documents represented by term-frequency vector: Doc1(5,3,0,2,1,2) Doc2(4,2,2,2,2,3)	**2**	**3**	**2**
	e).	What is the problem of classification?	**3**	**2**	**2**
	f).	What are root node, internal node, and leaf node in a decision tree?	**3**	**2**	**2**
	g).	Explain support and confidence of an association rule: X→Y	**4**	**2**	**2**
	h).	What is meant by a closed frequent item set?	**4**	**2**	**2**
	i).	List out the major approaches to clustering.	**5**	**1**	**2**
	j).	Mention two limitations of k-means clustering.	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Differentiate between OLTP systems and OLAP systems in various aspects.	**1**	**2**	**5**
	b).	Draw three-tier architecture for data warehouse and explain the components of each layer.	**1**	**2**	**5**
		OR			
3.	**a).**	Explain the three schemas for multidimensional data models.	**1**	**2**	**5**
	b).	Explain briefly any three OLAP operations considering example of any three dimensional data.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Apply distance measures Euclidean and Manhattan to find the distance between objects represented by the tuples (22,1,42,10) and (20,0,36,8).	**2**	**3**	**5**
	b).	Explain about various types of attributes with suitable examples.	**2**	**2**	**5**
		OR			
5.	**a).**	Apply covariance and comment on the correlation of numeric attributes	**2**	**3**	**5**

<table>
<tr><td></td><td></td><td>A and B:<table><tr><td>A</td><td>6</td><td>8</td><td>11</td><td>11</td><td>14</td></tr><tr><td>B</td><td>7</td><td>8</td><td>12</td><td>14</td><td>14</td></tr></table></td><td></td><td></td><td></td></tr>
<tr><td></td><td>b).</td><td>Explain various sampling strategies for data reduction. Mention merits and demerits of each strategy.</td><td>2</td><td>2</td><td>5</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-3</td><td></td><td></td><td></td></tr>
<tr><td>6.</td><td>a).</td><td>Explain clearly the process of inducing a decision tree.</td><td>3</td><td>2</td><td>7</td></tr>
<tr><td></td><td>b).</td><td>Explain briefly bootstrap method used for evaluating the performance of a classifier.</td><td>3</td><td>2</td><td>3</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>7.</td><td>a).</td><td>Explain the approach to classify a tuple using naïve Bayes approach.</td><td>3</td><td>2</td><td>7</td></tr>
<tr><td></td><td>b).</td><td>Explain briefly rule-based and class-based ordering of rules generated by a rule based classifier.</td><td>3</td><td>2</td><td>3</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-4</td><td></td><td></td><td></td></tr>
<tr><td>8.</td><td>a).</td><td>Apply Apriori algorithm on the following set of transactions and determine all frequent item sets. Consider minimum support count required as 4.<table><tr><th>TID</th><th>Items_Bought</th></tr><tr><td>T100</td><td>{I1,I2,I3,I4,I5}</td></tr><tr><td>T200</td><td>{I3,I4,I5,I6}</td></tr><tr><td>T300</td><td>{I1,I4,I5}</td></tr><tr><td>T400</td><td>{I1,I2,I4,I5}</td></tr><tr><td>T500</td><td>{I2,I4,I5,I6}</td></tr><tr><td>T600</td><td>{I1,I3,I4,I5}</td></tr></table>Clearly indicate the pruning step where ever applied.</td><td>4</td><td>3</td><td>7</td></tr>
<tr><td></td><td>b).</td><td>Describe the methods to improve the efficiency of Apriori algorithm.</td><td>4</td><td>2</td><td>3</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>9.</td><td>a).</td><td>Apply FP Growth algorithm on the following set of transactions and determine all frequent item sets. Consider minimum support count required as 3.<table><tr><td>TID</td><td>Items_Bought</td></tr><tr><td>T100</td><td>{A,B,D }</td></tr><tr><td>T200</td><td>{A,B,C }</td></tr><tr><td>T300</td><td>{B,C,D,E }</td></tr><tr><td>T400</td><td>{A,C,E }</td></tr><tr><td>T500</td><td>{A,B,C,E }</td></tr><tr><td>T600</td><td>{A,B,D,E}</td></tr></table></td><td>4</td><td>3</td><td>7</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>b).</td><td>Explain confidence-based pruning of association rules stating the relevant theorem.</td><td>4</td><td>2</td><td>3</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-5</td><td></td><td></td><td></td></tr>
<tr><td>10.</td><td>a).</td><td>Apply K-means clustering to form 2 clusters from the following data points: A(5,3) B(-3,4) C(2,4) D(6,5), E(4,3) Consider Euclidean distance. Consider C and D as initial cluster centers. Perform 2 iterations.</td><td>5</td><td>3</td><td>7</td></tr>
<tr><td></td><td>b).</td><td>Explain briefly about well-separated and center-based clusters.</td><td>5</td><td>3</td><td>3</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>11.</td><td>a).</td><td>Apply the approach of single link and perform agglomerative clustering of the points whose pair-wise distance is as follows:

<table>
<tr><td></td><td>P1</td><td>P2</td><td>P3</td><td>P4</td><td>P5</td><td>P6</td></tr>
<tr><td>P1</td><td>0.00</td><td>0.27</td><td>0.25</td><td>0.35</td><td>0.33</td><td>0.26</td></tr>
<tr><td>P2</td><td>0.27</td><td>0.00</td><td>0.23</td><td>0.25</td><td>0.22</td><td>0.29</td></tr>
<tr><td>P3</td><td>0.25</td><td>0.23</td><td>0.00</td><td>0.23</td><td>0.28</td><td>0.11</td></tr>
<tr><td>P4</td><td>0.35</td><td>0.25</td><td>0.23</td><td>0.00</td><td>0.33</td><td>0.29</td></tr>
<tr><td>P5</td><td>0.33</td><td>0.22</td><td>0.28</td><td>0.33</td><td>0.00</td><td>0.40</td></tr>
<tr><td>P6</td><td>0.26</td><td>0.29</td><td>0.11</td><td>0.29</td><td>0.40</td><td>0.00</td></tr>
</table>
Draw dendrogram also.</td><td>5</td><td>3</td><td>7</td></tr>
<tr><td></td><td>b).</td><td>Explain core, object, and noise points in DBSCAN approach with a suitable example.</td><td>5</td><td>2</td><td>3</td></tr>
</table>

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3102
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. I Semester MODEL QUESTION PAPER					
PRINCIPLES OF MACHINE LEARNING					
For AIDS					
Time: 3 Hrs.					**Max. Marks: 70 M**
Answer Question No.1 compulsorily					
Answer **ONE** Question from **EACH UNIT**					
Assume suitable data if necessary					
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Compare AL,Ml,DL	**1**	**2**	**2**
	b).	Define Bias and Variance	**1**	**2**	**2**
	c).	List the types of regression	**2**	**1**	**2**
	d).	Define Binary classification	**2**	**1**	**2**
	e).	List the type of learners	**3**	**1**	**2**
	f).	Outline the limitations of KNN	**3**	**2**	**2**
	g).	Compare SVM with SVR	**4**	**2**	**2**
	h).	Outline the measures of similarity and dis-similarity in cluster analysis	**4**	**2**	**2**
	i).	Explain about partitioning methods	**5**	**2**	**2**
	j).	Outline the importance of perceptron	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain about different types of machine learning	**1**	**2**	**5**
	b).	Explain about feature selection and extraction	**1**	**2**	**5**
		OR			
3.	**a).**	Explain any 7 challenges of Machine learning	**1**	**2**	**5**
	b).	Contrast between Overfitting and Underfitting	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Differentiate between Linear and Non linear regression	**2**	**3**	**10**
		OR			
5.	**a).**	Explain about regularization and its types	**2**	**3**	**5**
	b).	Summarize the importance of logistic regression	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Outline Binary classifier,Multi class classifier,Multi label classification and imbalanced classification	**3**	**3**	**10**

<table>
<tr><td></td><td></td><td colspan="1">OR</td><td></td><td></td><td></td></tr>
<tr><td>7.</td><td>a).</td><td>Illustrate about distance metrics</td><td>3</td><td>3</td><td>5</td></tr>
<tr><td></td><td>b).</td><td>Explain the key assumptions of Naive Bayes and describe how it calculates the probability of a class given the feature values.</td><td>3</td><td>3</td><td>5</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-4</td><td></td><td></td><td></td></tr>
<tr><td>8.</td><td>a).</td><td>Summarize Ensembling learning techniques</td><td>4</td><td>3</td><td>10</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>9.</td><td>a).</td><td>Develop K-Means algorithm for the following data with 2 clusters
<table><tr><td>Entity</td><td>X1</td><td>X2</td></tr><tr><td>A</td><td>1.0</td><td>2.0</td></tr><tr><td>B</td><td>1.5</td><td>1.8</td></tr><tr><td>C</td><td>1.2</td><td>1.9</td></tr><tr><td>D</td><td>5.0</td><td>8.0</td></tr><tr><td>E</td><td>6.0</td><td>9.0</td></tr><tr><td>F</td><td>5.5</td><td>7.5</td></tr></table></td><td>4</td><td>3</td><td>10</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-5</td><td></td><td></td><td></td></tr>
<tr><td>10.</td><td>a).</td><td>Explain the working of the Random Forest algorithm and apply your understanding to show how it improves prediction accuracy compared to a single decision tree</td><td>5</td><td>3</td><td>10</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>11.</td><td>a).</td><td>Analyze how the Back propagation algorithm updates the weights to minimize the error during the training process.</td><td>5</td><td>3</td><td>10</td></tr>
</table>

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

Course Code:B23AD3103

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A) **R23**

III B.Tech. I Semester MODEL QUESTION PAPER

OPERATING SYSTEMS

For AIDS

Time: 3 Hrs. **Max. Marks: 70 M**

Answer Question No.1 compulsorily

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

Assume suitable data if necessary

10 x 2 = 20 Marks

			CO	KL	M
1.	**a).**	Define Operating system.	**1**	**1**	**2**
	b).	Explain Debugging	**1**	**2**	**2**
	c).	List Multi-threading Models	**2**	**1**	**2**
	d).	Explain Context-Switching	**2**	**2**	**2**
	e).	What is Monitor?	**3**	**2**	**2**
	f).	Demonstrate Swapping	**3**	**2**	**2**
	g).	What are Contiguous memory allocation techniques.	**4**	**2**	**2**
	h).	What is Page fault?	**4**	**2**	**2**
	i).	List any two File attributes.	**5**	**1**	**2**
	j).	Define Access Matrix.	**5**	**1**	**2**

5 x 10 = 50 Marks

		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Draw the Micro kernel Operating System Structure and explain the components.	**1**	**2**	**5**
	b).	Describe the major services provided by Operating System	**1**	**2**	**5**
		OR			
3.	**a).**	Explain the different process management system calls	**1**	**2**	**5**
	b).	Illustrate the Booting process of Operating System	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Illustrate Thread scheduling algorithms	**2**	**2**	**4**
	b).	Assume you have the following jobs to execute with one processor, with the jobs arriving in the order listed here Process | Burst Time | Arrival Time P0 | 80 | 0	**2**	**3**	**6**

		<table><tr><td>P1</td><td>20</td><td>10</td></tr><tr><td>P2</td><td>10</td><td>10</td></tr><tr><td>P3</td><td>20</td><td>80</td></tr><tr><td>P4</td><td>50</td><td>85</td></tr></table> Find out the following by using Round Robin Scheduling Algorithm with a Quantum of 15. i. Gantt chart illustrating the execution of these processes ii. Turnaround time of the Processes iii. Average wait time for the Processes			
		OR			
5.		Assume you have the following jobs to execute with one processor <table><tr><td>Process Id</td><td>Arrival time</td><td>Burst time</td><td>Priority</td></tr><tr><td>P1</td><td>8</td><td>6</td><td>1</td></tr><tr><td>P2</td><td>5</td><td>15</td><td>2</td></tr><tr><td>P3</td><td>4</td><td>8</td><td>0</td></tr><tr><td>P4</td><td>3</td><td>5</td><td>4</td></tr><tr><td>P5</td><td>0</td><td>13</td><td>3</td></tr></table> Find out Average Waiting time and Average Turnaround Time using Shortest Job First (Both Preemptive and Non-Premptive)	**2**	**3**	**10**
		UNIT-3			
6.	**a).**	Illustrate the Critical Section Problem solution for the Dining Philosophers problem using Semaphores	**3**	**2**	**5**
	b).	Describe in detail Sleep and Wakeup	**3**	**2**	**5**
		OR			
7.		Describe Dead lock avoidance using Banker's Algorithm with an example.	**3**	**2**	**10**
		UNIT-4			
8.	**a).**	Compare Contiguous and Non-Contiguous memory allocations	**4**	**2**	**4**
	b).	Find out the seek distance of read write head using Shortest seek time first Disk scheduling algorithm, when the order of cylinder request is 82, 170, 43, 140, 24, 16, 190 and current position of Read/Write head is: 50.	**4**	**3**	**6**
		OR			

9.	**a).**	Consider the following page reference string: 1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6. Find out the Number of Page faults using i) FIFO, LRU and Optimal page replacement algorithms with 3 frames.	**4**	**3**	**6**
	b).	Explain any two RAID Levels with diagram.	**4**	**2**	**4**
		UNIT-5			
10.	**a).**	Discuss File system implementation and explain File allocation algorithm.	**5**	**2**	**5**
	b).	What is the Access Matrix? Explain copy, owner and control rights with an example access matrix.	**5**	**2**	**5**
		OR			
11.	**a).**	Explain various file access methods with suitable examples.	**5**	**2**	**5**
	b).	Explain Protection goals and principles.	**5**	**2**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

				Course Code:B23AD3104	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
OBJECT-ORIENTED ANALYSIS AND DESIGN					
For AIDS					
Time: 3 Hrs.				**Max. Marks: 70 M**	
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
				10 x 2 = 20 Marks	
			CO	**KL**	**M**
1.	**a).**	Define object model.	**1**	**1**	**2**
	b).	Explain why an object-oriented approach is preferable when compared to other approaches?	**1**	**2**	**2**
	c).	What is key abstraction?	**2**	**1**	**2**
	d).	List the relationships among classes.	**2**	**1**	**2**
	e).	What is the importance of modeling?	**3**	**1**	**2**
	f).	Explain annotational things.	**3**	**2**	**2**
	g).	What is an Usecase?	**4**	**1**	**2**
	h).	Define include and extend relationships used in use-case diagram.	**4**	**1**	**2**
	i).	What is the difference between node and device?	**5**	**1**	**2**
	j).	Define component diagram.	**5**	**1**	**2**
				5 x 10 = 50 Marks	
		UNIT-1			
2.	**a).**	Explain the structure of complex systems.	**1**	**2**	**5**
	b).	Interpret the evolution of object model.	**1**	**2**	**5**
		OR			
3.	**a).**	Interpret the attributes of complex systems.	**1**	**2**	**5**
	b).	Explain Organized and Disorganized Complexity.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Illustrate the relationship among Classes	**2**	**2**	**5**
	b).	How to identify Classes and Objects? Give an example	**2**	**3**	**5**
		OR			
5.	**a).**	Define an object. Illustrate common uses of objects with an example	**2**	**2**	**5**
	b).	Explain key abstractions and mechanisms	**2**	**2**	**5**
		UNIT-3			

6.	**a).**	Demonstrate the basic blocks of the UML	**3**	**3**	**5**
	b).	Design class diagram for “online job portal”.	**3**	**3**	**5**
		OR			
7.	**a).**	Design object diagram for “online health care system”.	**3**	**3**	**5**
	b)	Differentiate class and object diagram with an example.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Illustrate use-case diagram and its relationships with an example.	**4**	**2**	**5**
	b)	Compose the state chart diagram for “online pharmacy management system”.	**4**	**3**	**5**
		OR			
9.	**a).**	Define an activity diagram. And explain its internal behavior with an example.	**4**	**2**	**5**
	b)	Discuss Interaction diagrams with an example	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	What are components? Show the stereotypes that apply to components	**5**	**2**	**5**
	b).	Describe deployment diagram. When will it be used in software life cycle	**5**	**3**	**5**
		OR			
11.	**a).**	Compose the component diagram for “unified library application”.	**5**	**3**	**5**
	b).	Differentiate the component diagram and deployment diagram.	**5**	**3**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3105
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		SOFT COMPUTING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Give at least five real-world applications of soft computing.	**1**	**2**	**2**
	b).	Explain the advantages of using hybrid soft computing models?	**1**	**2**	**2**
	c).	Describe Multilayer Perceptron (MLP)?	**2**	**2**	**2**
	d).	List at least five practical applications of neural networks.	**2**	**1**	**2**
	e).	Discuss the fuzzy control system?	**3**	**2**	**2**
	f).	Explain the advantages of using fuzzy logic in real-world systems?	**3**	**2**	**2**
	g).	Describe the steps involved in evolutionary programming	**4**	**2**	**2**
	h).	Explain Artificial Bee Colony Optimization?	**4**	**2**	**2**
	i).	Define neuro-fuzzy system?	**5**	**1**	**2**
	j).	Compare genetic-fuzzy systems with neuro-fuzzy systems in terms of performance and adaptability.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	List out and explain various types of soft computing techniques.	**1**	**2**	**5**
	b).	Define and explain the meaning of the term “Artificial Intelligence”?	**1**	**2**	**5**
		OR			
3.	**a).**	Define soft computing. Distinguish between soft computing and hard computing.	**1**	**2**	**5**
	b).	Explain the rules of inference in AI.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Explain with neat diagram supervised and unsupervised learning in Neural Networks.	**2**	**2**	**5**
	b).	“Neuron inhibition depends on activation function” Justify this statement with different types of activation functions.	**2**	**2**	**5**
		OR			
5.	**a).**	Explain the taxonomy of artificial neural network architectures.	**2**	**2**	**5**
	b).	Define and explain perceptron in detail with a neat sketch.	**2**	**2**	**5**

		UNIT-3			
6.	**a).**	Explain the Membership function, fuzzy set, and fuzzy if-then Rules.	**3**	**2**	**5**
	b).	Explain Fuzzy Logic, fuzzy set. Briefly.	**3**	**2**	**5**
		OR			
7.	**a).**	Define Fuzzification and Defuzzification in fuzzy logic system components.	**3**	**2**	**2**
	b).	Differentiate Fuzzification and Defuzzification.	**3**	**2**	**3**
		UNIT-4			
8.	**a).**	Explain Genetic Algorithm in terms of individual, gene, fitness, population, encoding, selection, crossover, mutation?	**4**	**2**	**5**
	b).	Explain Genetic algorithm in terms of Reproduction, Selection, Evaluation and Replacement.	**4**	**2**	**5**
		OR			
9.	**a).**	How Genetic Algorithm is different from traditional algorithms? Explain.	**4**	**2**	**5**
	b).	Discuss Crossover operation in GA and its types?	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Explain the Fuzzy back propagation network with a neat diagram.	**5**	**2**	**5**
	b).	Explain the Adaptive neuro fuzzy inference systems.	**5**	**2**	**5**
		OR			
11.	**a).**	Explain the following terms a) Cooperative Neural Fuzzy Systems b) General Neuro Fuzzy Hybrid Systems	**5**	**2**	**5**
	b).	Explain the Genetic-fuzzy hybrid systems in detail.	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3106
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		INTERNET OF THINGS			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define the Internet of Things.	**1**	**1**	**2**
	b).	Explain smart and Hyperconnected devices.	**1**	**1**	**2**
	c).	Why is a gateway necessary in a communication framework for IoT and M2M applications and services?	**2**	**1**	**2**
	d).	Explain the use of RFID in IoT.	**2**	**1**	**2**
	e).	List the microcontrollers and device platforms which IoTs can use.	**1**	**1**	**2**
	f).	List the functions of DTLS.	**3**	**1**	**2**
	g).	List the features of CoAP	**3**	**1**	**2**
	h).	What does OLAP mean?	**4**	**1**	**2**
	i).	What is a smart sensor? What are the capabilities of a smart sensor?	**5**	**1**	**2**
	j).	List the different types of data which is generated at the devices.	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain the Architectural views for IoT.	**1**	**2**	**5**
	b).	Explain various terms in Application Layer Protocols- HTTP, HTTPS, FTP	**1**	**2**	**5**
		OR			
3.	**a).**	Explain the Sources of IoT and Examples of IoT.	**1**	**2**	**5**
	b).	Explain the Technology behind IoT.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Explain Device Management Gateway Ease of designing and affordability	**2**	**2**	**5**
	b).	Explain ETSI M2M High- level capabilities and Communication Technologies	**2**	**2**	**5**
		OR			
5.	**a).**	Explain IoT/M2M systems LAYERS and designs standardizations	**2**	**2**	**10**

		UNIT-3			
6.	**a).**	Explain web communication protocols used by connected IoT/M2M devices	**3**	**2**	**5**
	b).	Describe Message Communication Protocols for Connected Devices	**3**	**2**	**5**
		OR			
7.	**a).**	Illustrate Web Connectivity for connected Devices.	**3**	**2**	**10**
		UNIT-4			
8.	**a).**	Explain the ways of organizing the data.	**4**	**2**	**5**
	b).	Illustrate IOT/M2M Data Acquiring and Storage.	**4**	**2**	**5**
		OR			
9.	**a).**	Explain the usage of data analytics and data visualizations for IoT applications and business processes.	**4**	**2**	**5**
	b).	Explain Transactions, Business Processes, Integration and enterprise systems.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Explain Cloud computing paradigm for data collection, storage and computing services	**5**	**2**	**5**
	b).	Describe IOT cloud-based services using the Xively.	**5**	**2**	**5**
		OR			
11.	**a).**	Describe Wireless, Sensor Network Technology, Sensors Technology, Sensing the World.	**5**	**2**	**5**
	b).	Illustrate Radio Frequency Identification.	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3107
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		EXPLORATORY DATA ANALYSIS WITH PYTHON			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer **ONE Question** from **EACH UNIT**			
		All questions carry equal marks			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define importance of Data science.	**1**	**2**	**2**
	b).	Create N-dimn Array	**1**	**3**	**2**
	c).	Explain data visualization tools	**2**	**2**	**2**
	d).	Explain Data Transformation.	**2**	**2**	**2**
	e).	Describe methods of join (merge, combinefirst).	**3**	**2**	**2**
	f).	Explain filling NaN values methods.	**3**	**2**	**2**
	g).	Define IQR function.	**4**	**2**	**2**
	h).	Explain Correlation and Covariance.	**4**	**2**	**2**
	i).	Define model selection and evaluation.	**5**	**2**	**2**
	j).	Importance of Z-test, T-test.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain Linear algebra with Numpy	**1**	**2**	**5**
	b).	Build in detail about EDA process with necessary examples	**1**	**2**	**5**
		OR			
3.	**a).**	Explain Required steps of data science	**1**	**2**	**5**
	b).	Explain stack and unstuck methods with examples	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Apply descriptive statistical methods with examples.	**2**	**3**	**5**
	b).	How can we visualize sub plots data in a single chart?	**2**	**2**	**5**
		OR			
5.	**a).**	Apply following visualization Techniques for a sample dataset a. Area Plot b. Stacked Plot c. Pie chart d. Table Chart	**2**	**3**	**10**
		UNIT-3			
6.	**a).**	Apply different Missing Data handling techniques a) NaN values in mathematical Operations	**3**	**3**	**10**

		b) Filling in missing data c) Forward and Backward filling of missing values d) Filling with index values e) Interpolation of missing values			
		OR			
7.	**a).**	Apply a methods join, Combine and reshape - Hierarchical indexing using student sample data.	**3**	**2**	**5**
	b).	Explain data transformation techniques.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Compute measure of Central Tendency on a sample dataset a) Mean b) Median c) STD	**4**	**2**	**5**
	b).	Apply Inter Quartile Range (IQR) and Visualize using Box Plots	**4**	**3**	**5**
		OR			
9.	**a).**	How to Perform Time Series Analysis on Open Power systems dataset.	**4**	**2**	**5**
	b).	Explain Bivariate analysis and Multivariate analysis	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Explain hypothesis testing using stats model's library	**5**	**2**	**5**
	b).	Explain model evaluation metrics.	**5**	**2**	**5**
		OR			
11.	**a).**	Case Study: Perform Exploratory Data Analysis with Wine Quality Dataset	**5**	**3**	**10**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3108
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		COMPUTER NETWORKS			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define a) Simple Analog Signal b) Composite analog signal	**1**	**1**	**2**
	b).	What do you mean by a) Layers b) Protocol	**1**	**1**	**2**
	c).	Explain the characteristics of twisted pair cable.	**2**	**2**	**2**
	d).	Calculate 4 bit checksum for the message 1010110101010100	**2**	**2**	**2**
	e).	What is the significance of variable length framing	**3**	**2**	**2**
	f).	Differences between FDMA and TDMA	**3**	**2**	**2**
	g).	What is CIDR addressing?	**4**	**1**	**2**
	h).	What is the purpose of TTL field in IPV4	**4**	**1**	**2**
	i).	Write uses of User Datagram Protocol (UDP)	**5**	**2**	**2**
	j).	What are the two main categories of DNS messages?	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain briefly about the TCP/IP Model.	**1**	**2**	**5**
	b).	Different types of networks	**1**	**1**	**5**
		OR			
3.	**a).**	Explain briefly about the ISO-OSI Model.	**1**	**2**	**5**
	b).	Discuss about Analog signals and digital signals	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Given 1101011011 data frame and generator polynomial G(x) = x4 + x + 1. Derive the transmitted frame	**2**	**2**	**5**
	b).	What are the Types of Wireless Transmission Media? Explain it.	**2**	**1**	**5**
		OR			
5.	**a).**	Discuss a) Packet Switching b) Circuit Switching	**2**	**1**	**5**
	b).	Discuss about error detection and correction code with example	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Explain CSMA/CD protocol and how does it detect collision?	**3**	**2**	**5**

	b).	Compare various sliding window protocols of data link layer	**3**	**2**	**5**
		OR			
7.	**a).**	How performance is improved in CSMA/CD protocol compared to CSMA protocol? Explain?	**3**	**2**	**5**
	b)	Explain modes and frames of HDLC	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Consider an address block 121.37.10.64 /26. Find the first and last addresses for each subnet, if 4 no of subnets required is as given in the input.	**4**	**2**	**5**
	b)	Describe the problem and solutions associated with distance vector routing.	**4**	**2**	**5**
		OR			
9.	**a).**	Given network address of 192.18.100.0 and a subnet mask of 255.255.255.192. a) How many subnets are created? b) How many hosts are there per subnet?	**4**	**2**	**5**
	b)	Discuss ICMP Messages.	**4**	**1**	**5**
		UNIT-5			
10.	**a).**	Explain about Application layer and its services in detail?	**5**	**2**	**5**
	b).	Describe TCP connection management.	**5**	**2**	**5**
		OR			
11.	**a).**	Discuss the features of HTTP and also discuss how HTTP works	**5**	**2**	**5**
	b).	Describe Avoidance of congestion in TCP	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3201
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
BIG DATA ANALYTICS					
For AIDS					
Time: 3 Hrs.					**Max. Marks: 70 M**
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Explain the characteristics of Big Data?	**1**	**2**	**2**
	b).	Give the definition of Hadoop.	**1**	**1**	**2**
	c).	Demonstrate data serialization in Hadoop.	**2**	**2**	**2**
	d).	List the building blocks of Hadoop V1 and Hadoop V2.	**2**	**1**	**2**
	e).	Explain the steps in map reduce algorithm.	**3**	**2**	**2**
	f).	Interpret Rack awareness in HDFS.	**3**	**2**	**2**
	g).	Explain Java interfaces to Map Reduce.	**4**	**2**	**2**
	h).	What are the differences between DBMS and DSMS?	**4**	**1**	**2**
	i).	Explain Pig relational operators?	**5**	**2**	**2**
	j).	Examine the differences between HBase and Hive.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Analyze how Google tile system differs from Hadoop file system and explain the Gfs architecture with neat sketch	**1**	**2**	**5**
	b).	Explain how Hadoop uses its own serialization format using Java	**1**	**1**	**5**
		OR			
3.	**a).**	What are the advantages of Hadoop? Explain Hadoop Architecture and its Components with proper diagram.	**1**	**2**	**5**
	b).	What is Meta data? What information does it provide and explain the role of Name node in a HDFS clusters?	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	List various configuration files used in Hadoop Installation. Explain the use of mapred-site.xml?	**2**	**2**	**5**
	b).	Illustrate anatomy of Map Reduce Job Run using YARN.	**2**	**2**	**5**
		OR			
5.	**a).**	Explain how Hadoop Streaming is suited for text processing	**2**	**2**	**5**
	b).	Demonstrate HDFS Write and Read with neat sketch	**2**	**2**	**5**

		UNIT-3			
6.	**a).**	Explain Job Scheduling in Map Reduce. How it is done in case of (i) The Fair Scheduler (ii) The Capacity Scheduler.	**3**	**2**	**5**
	b).	Implement Matrix multiplication using Map Reduce.	**3**	**3**	**5**
		OR			
7.	**a).**	Explain the role of combiner and partitioner in a map reduce application?	**3**	**2**	**5**
	b).	Develop Map Reduce code for counting occurrences of specific words in the input text.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	With a suitable example explain the working principle of Blooms filter in stream filtering? List out its strengths and weaknesses.	**4**	**2**	**5**
	b).	Illustrate Decaying Window Algorithm to find the most popular element in a twitter data stream S= ai, iot, ai, iot, ai, ai, iot, ai, ai.	**4**	**3**	**5**
		OR			
9.	**a).**	Explain Spark components in detail. Also list the features of spark.	**4**	**2**	**5**
	b).	Explain the concept of Resilient Distributed Dataset (RDD) in Apache Spark. Write a Spark program to demonstrate basic RDD operations.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Describe the structure and features of Pig Latin language. Write a Pig Latin script to load a dataset using suitable examples.	**5**	**3**	**5**
	b).	Illustrate Hbase architecture and explain the role of Zookeeper in Hbase architecture.	**5**	**2**	**5**
		OR			
11.	**a).**	Explain the features of HiveQL. Write HiveQL queries to create a table, load data into it, and perform basic data manipulation operations with suitable examples.	**5**	**3**	**5**
	b).	Explain working of Hive with diagram and Explain hive storage formats.	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3202
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		DEEP LEARNING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Give one example of how Deep Learning is used in Natural Language Processing	**1**	**1**	**2**
	b).	What are Generative Adversarial Networks (GANs)	**1**	**1**	**2**
	c).	What is the advantage of using the ReLU activation function over the Sigmoid function in deep learning?	**2**	**1**	**2**
	d).	Explain the purpose of backpropagation in training a neural network ?	**2**	**2**	**2**
	e).	What is the advantage of using pretrained models in transfer learning for CNNs?	**3**	**1**	**2**
	f).	How does data augmentation help in improving the performance of CNNs?	**3**	**1**	**2**
	g).	What is the role of attention mechanisms in Transformers?	**4**	**1**	**2**
	h).	How does BERT differ from GPT in terms of model architecture?	**4**	**1**	**2**
	i).	What are some ethical concerns related to the use of AI in decision-making?	**5**	**1**	**2**
	j).	What are Variational Autoencoders (VAEs)?	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Define Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning. Explain the relationship between them.	**1**	**2**	**5**
	b).	Describe the Perceptron model in Neural Networks and explain the role of activation functions in neural network training.	**1**	**2**	**5**
		OR			
3.	**a).**	Compare and contrast the Feedforward Neural Network (FNN), Convolutional Neural Network (CNN)	**1**	**3**	**5**
	b).	Explain the structure and working of Recurrent Neural Networks (RNN). How do RNNs handle sequential data?	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Explain the architecture of an Artificial Neural Network (ANN).	**2**	**2**	**5**
	b).	Discuss the different types of loss functions used in neural networks.	**2**	**2**	**5**

		OR			
5.	**a).**	Discuss the regularization techniques, such as Dropout and L1/L2 regularization, and explain how they help in improving model generalization.	**2**	**2**	**5**
	b).	How does the gradient descent algorithm work to minimize the error, and what are the different types of gradient descent?	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Describe the convolution and pooling operations in Convolutional Neural Networks (CNNs).	**3**	**2**	**5**
	b).	Compare and contrast the CNN architectures: LeNet, AlexNet, VGG, and ResNet ?	**3**	**3**	**5**
		OR			
7.	**a).**	Explain the key differences between the object detection models YOLO, SSD, and Faster R-CNN.	**3**	**2**	**5**
	b).	Explain the concept of feature maps in Convolutional Neural Networks (CNNs)?	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Explain the concept of sequential data processing. Why is sequential data, such as time-series data or text, unique in terms of how it's handled in machine learning models?	**4**	**2**	**5**
	b).	Describe the basic structure and working of Recurrent Neural Networks (RNNs)?	**4**	**2**	**5**
		OR			
9.	**a).**	What is the vanishing gradient problem in Recurrent Neural Networks (RNNs)?	**4**	**2**	**5**
	b).	Compare and contrast Word2Vec and GloVe, discussing how they represent words in a continuous vector space and their advantages in NLP task?	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	How does Deep Q Network (DQN) extend Q-learning using deep learning techniques, and what are the challenges associated with training DQNs	**4**	**2**	**5**
	b).	Why is explainability and interpretability important in deep learning models?	**4**	**2**	**5**
		OR			
11.	**a).**	Explain the process of deploying a deep learning model using Flask or FastAPI.	**4**	**2**	**5**
	b).	Explain how reinforcement learning (RL) is applied in real-world scenarios.	**4**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3203
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		NATURAL LANGUAGE PROCESSING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define tokenization in NLP.	**1**	**2**	**2**
	b).	What is the role of regular expressions in text processing?	**1**	**2**	**2**
	c).	Define Part-of-Speech (PoS) tagging.	**2**	**2**	**2**
	d).	What is the significance of word classes in NLP?	**2**	**2**	**2**
	e).	What is a Treebank?	**3**	**2**	**2**
	f).	Define shallow parsing.	**3**	**2**	**2**
	g).	What are semantic attachments in syntax trees?	**4**	**2**	**2**
	h).	Define word sense in the context of NLP.	**4**	**2**	**2**
	i).	What is the purpose of Porter Stemmer in NLP?	**5**	**2**	**2**
	j).	Define Coreference Resolution.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain the challenges in Natural Language Processing (NLP).	**1**	**2**	**5**
	b).	Describe the concept of Minimum Edit Distance and explain how it is calculated.	**1**	**2**	**5**
		OR			
3.	**a).**	Describe statistical language modeling and compare it with grammar-based language modeling.	**1**	**2**	**5**
	b).	Explain the use of Finite-State Automata in NLP with relevant examples.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Apply the Hidden Markov Model to demonstrate the functioning of a PoS tagger using a sample sentence.	**2**	**3**	**5**
	b).	Implement and compare different smoothing techniques in N-gram models.	**2**	**3**	**5**
		OR			
5.	**a).**	Analyze and contrast Rule-based, Stochastic, and Transformation-based PoS tagging methods through an example.	**2**	**3**	**5**
	b).	Apply interpolation and backoff techniques to a given N-gram language modeling task.	**2**	**3**	**5**

		UNIT-3			
6.	**a).**	What is a Context-Free Grammar (CFG)? Explain its use in syntactic parsing.	**3**	**2**	**5**
	b).	Explain the purpose of probabilistic CFGs in syntactic parsing with the help of an example.	**3**	**2**	**5**
		OR			
7.	**a).**	Describe the concept of dynamic programming in syntactic parsing.	**3**	**2**	**5**
	b).	Discuss the role of feature structures and unification in NLP.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Analyze and compare supervised and dictionary-based Word Sense Disambiguation (WSD) techniques.	**4**	**3**	**5**
	b).	Apply the concepts of thematic roles and selectional restrictions to identify semantic roles in a sentence.	**4**	**3**	**5**
		OR			
9.	**a).**	Implement Syntax-Driven Semantic Analysis using an example sentence.	**4**	**3**	**5**
	b).	Measure and compare word similarity using thesaurus-based and distributional methods.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	What is Anaphora Resolution? Describe Hobbs and Centering Algorithms.	**5**	**2**	**5**
	b).	Describe the role of WordNet and Frame Net in NLP.	**5**	**2**	**5**
		OR			
11.	**a).**	What is discourse segmentation? Explain reference phenomena and coherence with examples.	**5**	**2**	**5**
	b).	Write short notes on: (i) Penn Treebank (ii) Brill's Tagger (iii) British National Corpus	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3204
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		CRYPTOGRAPHY AND NETWORK SECURITY			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	What is meant by cryptography and cryptanalysis?	**1**	**2**	**2**
	b).	What are the key principles of security?	**1**	**2**	**2**
	c).	Distinguish between passive attacks and active attacks?	**1**	**2**	**2**
	d).	Compare symmetric and asymmetric key cryptography.	**2**	**2**	**2**
	e).	What is the need for Diffie-Hellman key exchange?	**1**	**2**	**2**
	f).	What is a hash function?	**3**	**1**	**2**
	g).	Write the four SSL Protocols.	**4**	**1**	**2**
	h).	What are the services provided by IPSec?	**5**	**1**	**2**
	i).	Define – Virus	**5**	**2**	**2**
	j).	List out the design goals of firewalls.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Outline the Principles of Security for Information Protection	**1**	**2**	**5**
	b).	What are the substitution techniques used in cryptography?	**1**	**2**	**5**
		OR			
3.	**a).**	How does the Playfair Cipher work? Provide an example	**1**	**2**	**5**
	b).	Explain the working of RC-4 algorithm	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Calculate the Cipher Text using RSA given P=17, Q=31, E=7, and PT=2.	**2**	**3**	**5**
	b).	Elaborate on the difference between Symmetric and Asymmetric Cryptography	**2**	**3**	**5**
		OR			
5.	**a).**	Describe the MD-5 Algorithm and its purpose.	**2**	**2**	**5**
	b).	How does the Digital Signature ensure message authenticity?	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	What is an Authentication Token Mechanism and how is it used	**3**	**3**	**5**
	b).	Explain the role of Kerberos in network security.	**3**	**2**	**5**

		OR			
7.	**a).**	Explain Digital Certificates and their usage.	**3**	**2**	**5**
	b).	What is the PKIX Model for managing digital certificates	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	How does IP Security (IPsec) protect data during transmission?	**4**	**3**	**5**
	b).	Detail the security mechanisms employed in GSM networks	**4**	**3**	**5**
		OR			
9.	**a).**	Explain the purpose of a Secure Socket Layer (SSL) in online communication.	**4**	**2**	**5**
	b).	What is the SET Protocol, and how does it secure online transactions?	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Define a virus and discuss countermeasures to mitigate its impact	**5**	**2**	**5**
	b).	Enumerate different types of threats affecting digital security	**5**	**2**	**5**
		OR			
11.	**a).**	Define different types of Denial-of-Service attacks.	**5**	**2**	**5**
	b).	What are Honeypots and how are they handled	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3205
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		OBJECT ORIENTED SOFTWARE ENGINEERING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	What is the need of software engineering?	**1**	**1**	**2**
	b).	List the advantages and disadvantages of the spiral model.	**1**	**1**	**2**
	c).	Define user centered design.	**2**	**1**	**2**
	d).	What type of relationships are used in use case diagram?	**2**	**1**	**2**
	e).	Define instance diagram.	**3**	**1**	**2**
	f).	What is the difference between node and device.	**3**	**1**	**2**
	g).	List the architectural patterns.	**4**	**1**	**2**
	h).	What is the importance of design?	**4**	**1**	**2**
	i).	Define SQA.	**5**	**1**	**2**
	j).	What is the difference between white-box testing and black-box testing?	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Interpret software engineering activities.	**1**	**2**	**5**
	b).	Interpret software requirements with examples	**1**	**2**	**5**
		OR			
3.	**a).**	Illustrate spiral model with neat diagram.	**1**	**2**	**5**
	b).	Illustrate waterfall model with neat diagram.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Interpret usability principles.	**2**	**2**	**5**
	b).	Illustrate use case model and their relationships.	**2**	**2**	**5**
		OR			
5.	**a).**	Design the complete use case model for the following system. **Vehicle Insurance Renewal System.**	**2**	**3**	**5**
	b).	Design interaction diagrams for **Online Book Sales with Mobile SMS.**	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Identify the relationships in class diagram for **online shopping.**	**3**	**3**	**5**

	b).	Design activity diagram for **Railway Reservation System.**	**3**	**3**	**5**
		OR			
7.	**a).**	Illustrate the relationships among class diagram	**3**	**2**	**5**
	b).	Design state chart diagram with your own example.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Interpret singleton pattern.	**4**	**2**	**5**
	b).	Interpret play-role pattern.	**4**	**2**	**5**
		OR			
9.	**a).**	Illustrate mvc and pipe-filter architectures.	**4**	**2**	**5**
	b).	Interpret principles leading to good design	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Interpret unit testing with an example.	**5**	**2**	**5**
	b).	Interpret system testing.	**5**	**2**	**5**
		OR			
11.	**a).**	Interpret activities of project management.	**5**	**2**	**5**
	b).	Interpret structure of project plan	**5**	**2**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3206
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		RECOMMENDER SYSTEMS			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define a recommender system.	**1**	**2**	**2**
	b).	What is a covariance matrix in recommender systems?	**1**	**2**	**2**
	c).	Define the concept of nearest neighbor in recommender systems.	**2**	**2**	**2**
	d).	What is pre-processing in collaborative filtering?	**2**	**2**	**2**
	e).	Define item profile in content-based recommendation.	**3**	**2**	**2**
	f).	What is a case-based recommender system?	**3**	**2**	**2**
	g).	What is hybridization in recommender systems?	**4**	**2**	**2**
	h).	Define cascade in pipelined hybrid design.	**4**	**2**	**2**
	i).	What is a historical dataset?	**5**	**2**	**2**
	j).	What is meant by community-based recommendation?	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain the role of linear algebra (matrix operations) in recommender systems with examples.	**1**	**2**	**5**
	b).	Describe any four real world applications of recommender systems.	**1**	**2**	**5**
		OR			
3.	**a).**	Illustrate matrix multiplication using a recommender system context.	**1**	**2**	**5**
	b).	Describe the process of collecting and using user feedback in recommendations.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Apply the user-based nearest neighbor recommendation approach to a given user-item rating scenario and demonstrate how a recommendation is made with an example.	**2**	**3**	**5**
	b).	Apply pre-processing techniques to improve collaborative filtering on a sample user-item matrix.	**2**	**3**	**5**
		OR			
5.	**a).**	Explain a model-based approach to collaborative filtering with a	**2**	**3**	**5**

		diagram.			
	b).	Apply a simulated attack to a collaborative filtering system and analyze its effect on recommendations.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Design a basic content-based recommendation system for recommending books using user preferences and item features.	**3**	**3**	**5**
	b).	Apply constraint-based reasoning to recommend suitable items for a user based on specified requirements and preferences.	**3**	**3**	**5**
		OR			
7.	**a).**	Apply feature extraction techniques to identify important terms from a document and represent them in an item profile for recommendation.	**3**	**3**	**5**
	b).	Design a case-based recommender that helps users find a suitable mobile phone by comparing current needs with previous user cases.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Explain the different types of hybridization strategies with examples.	**4**	**2**	**5**
	b).	Explain the cascade model in pipelined hybridization with a diagram.	**4**	**2**	**5**
		OR			
9.	**a).**	Explain the role of feature combination in hybrid recommender systems with a suitable example.	**4**	**2**	**5**
	b).	Describe the switching hybrid approach used in recommender systems with an example.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Apply appropriate evaluation metrics to assess the performance of different recommender systems.	**5**	**3**	**5**
	b).	Demonstrate the application of social tagging features to improve recommendation quality and personalization.	**5**	**3**	**5**
		OR			
11.	**a).**	Apply error, decision-support, and user-centered metrics to evaluate the effectiveness of a recommender system.	**5**	**3**	**5**
	b).	Analyze and apply personalization techniques to improve recommendations in community-based systems.	**5**	**3**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3207
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
COMPUTER VISION					
For AIDS					
Time: 3 Hrs.					**Max. Marks: 70 M**
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define linear filtering?	**1**	**2**	**2**
	b).	Define Fourier Transformation?	**1**	**2**	**2**
	c).	Define points and patches	**2**	**2**	**2**
	d).	Describe pose estimation	**2**	**2**	**2**
	e).	Define Factorization	**3**	**2**	**2**
	f).	Define Layered motion	**3**	**2**	**2**
	g).	Describe image stitching	**4**	**2**	**2**
	h).	Define texture Analysis	**4**	**2**	**2**
	i).	Describe 3D Reconstruction.	**5**	**2**	**2**
	j).	Describe model-based reconstruction	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Describe the applications of computer vision in healthcare, agriculture, and surveillance systems.	1	2	5
	b).	Explain Geometric primitives and Transformation	1	2	5
		OR			
3.	**a).**	Explain Global Optimization with an example	1	2	5
	b).	Explain pyramids and wavelets with examples	1	2	5
		UNIT-2			
4.	**a).**	Explain feature-based alignment?	2	2	5
	b).	Explain Geometric Intrinsic Calibration	2	2	5
		OR			
5.	**a).**	Explain Image Segmentation? How it is achieved	2	3	5
		UNIT-3			
6.	**a).**	Explain Two-frame Structure from Motion	3	2	5
	b).	Explain constrained structure and motion	3	2	5

		OR			
7.	**a).**	Explain dense motion estimation	3	2	5
	b).	Explain spline-based motion	3	2	5
		UNIT-4			
8.	**a).**	Explain Image stitching Motion models	4	2	5
	b).	Explain image Matting and Compositing	4	2	5
		OR			
9.	**a).**	How super resolution and Blur removal performed in image processing	4	3	5
	b).	Explain image Matting and Compositing	4	2	5
		UNIT-5			5
10.	**a).**	Explain different types of image representations in 3D reconstruction.	5	2	5
	b).	Explain image-based rendering with an example	5	2	5
		OR			
11.	**a).**	Explain view interpolation with necessary example	5	2	5
	b).	Explain the following 1. Lumigraphs 2. Environment Mattes	5	2	5

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as A,B splits or as a single Question for 10 marks

Course Code:B23AD3208

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A) **R23**

III B.Tech. II Semester MODEL QUESTION PAPER

AUTOMATA THEORY & COMPILER DESIGN

For AIDS

Time: 3 Hrs. **Max. Marks: 70 M**

Answer Question No.1 compulsorily

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

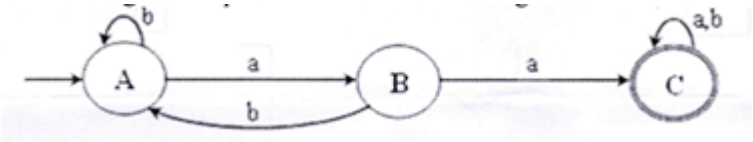
Assume suitable data if necessary

10 x 2 = 20 Marks

			CO	KL	M
1.	**a).**	Explain the Chomsky Hierarchy of languages.	**1**	**2**	**2**
	b).	Explain the Kleen and Positive closures of a language.	**1**	**2**	**2**
	c).	List the applications of Pumping Lemma.	**2**	**2**	**2**
	d).	Write algebraic laws for Regular Expressions	**2**	**2**	**2**
	e).	Mathematical Representation of Push Down Automata.	**3**	**2**	**2**
	f).	Define Non deterministic Turning Machine	**3**	**2**	**2**
	g).	State Token, Lexeme, Pattern.	**4**	**2**	**2**
	h).	Explain the Top Down and Bottom Up Parsing.	**4**	**2**	**2**
	i).	Define Syntax Directed Definition	**5**	**2**	**2**
	j).	List the Issues in the Design of Code Generator	**5**	**2**	**2**

5 x 10 = 50 Marks

		UNIT-1			
2.	**a).**	Design DFA to accept set of binary strings of 0's and 1's only those that are divisible by 3.	**1**	**3**	**5**
	b).	Convert the following NFA to DFA |	0	1 | |→p | {p,q} | {p} | | q | {r} | {r} | | r | {s} | ø | | *s | {s} | {s} |	**1**	**3**	**5**
		OR			
3.	**a).**	Design a DFA to accept set of binary strings of 0's and 1's which do not contain substring 01.	**1**	**3**	**7**
	b).	List and explain the applications of finite automata.	**1**	**2**	**3**

		UNIT-2			
4.	**a).**	Find the Regular Expression for the following finite Automaton. 	**2**	**3**	**5**
	b).	Show that the grammar is ambiguous S→ a | abSb | aAb A→ bs | aAAb	**2**	**3**	**5**
		OR			
5.	**a).**	Obtain finite automata for regular expression denoted by (0*+1*+2*)*.	**2**	**3**	**5**
	b).	Define CFG. Consider the following CFG S→0B|1A A→0|0S|1AA B→1|1S|0BB Derive LMD and RMD for the string 00110101	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Explain the types of CFL Acceptance in PDA?	**3**	**2**	**3**
	b).	Design a Turing Machine to recognize the Language L={$0^n 1^n$ |n ≥ 1}	**3**	**3**	**7**
		OR			
7.	**a).**	Design a PDA for the following CFG S→0A A→0AB|1 B→1	**3**	**3**	**5**
	b).	Differentiate between Turning Machine and Push Down Automata.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Explain Phases of compiler with a neat Sketch.	**4**	**2**	**5**
	b).	Construct the LL(1) parsing table for the following grammar. E →T+E|T T→float|float*T|(E)	**4**	**3**	**5**
		OR			
9.	**a).**	Elaborate specification and recognition of tokens	**4**	**2**	**5**
	b).	Construct LALR(1) parser for the following grammar. S→L=R|R L→*R|id R→L	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Explain Peephole Optimization.	**5**	**2**	**5**
	b).	Design DAG for the following basic block: D:=B-C E:=A+B B:=B+C A:=E-C	**5**	**3**	**5**
		OR			
11.	**a).**	Write the quadruples, triples and indirect triples for the expression: (a+b)*(c+d)*(a+b+c)	**5**	**3**	**5**
	b).	Explain the simple code generation algorithm with example.	**5**	**3**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3210
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		QUANTUM COMPUTING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Define eigenvectors and eigenvalues in quantum computing.	**1**	**2**	**2**
	b).	What are Pauli matrices? List them.	**1**	**2**	**2**
	c).	Explain the concept of quantum parallelism.	**2**	**2**	**2**
	d).	What is a quantum bit (qubit)?	**2**	**2**	**2**
	e).	What is a Bell state?	**3**	**2**	**2**
	f).	What is the importance of universal quantum gates?	**3**	**2**	**2**
	g).	How does quantum search help in solving NP-complete problems?	**4**	**2**	**2**
	h).	What is meant by an unstructured database in quantum search?	**4**	**2**	**2**
	i).	Explain the purpose of the Shor code in quantum error correction.	**5**	**2**	**2**
	j).	Define projective measurement in quantum mechanics.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain linear operator properties with example?	**1**	**2**	**5**
	b).	Describe tensor products and their role in quantum computing.	**1**	**2**	**5**
		OR			
3.	**a).**	Discuss eigenvalues, eigenvectors, and Hermitian operators.	**1**	**2**	**5**
	b).	Explain the singular value decomposition and its significance in quantum computing.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Discuss the history and evolution of quantum computation.	**2**	**2**	**5**
	b).	Explain single qubit and multiple qubit gates with diagrams.	**2**	**2**	**5**
		OR			
5.	**a).**	Describe the Deutsch–Jozsa algorithm with steps.	**2**	**2**	**5**
	b).	What is quantum teleportation? Explain with a circuit diagram.	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Explain quantum state space and quantum evolution.	**3**	**3**	**5**

	b).	What is a density operator? Describe its properties.	**3**	**3**	**5**
		OR			
7.	**a).**	Describe POVM measurements.	**3**	**3**	**5**
	b).	Explain the concept of reduced density operator.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Discuss the universal quantum gates and their importance.	**4**	**2**	**5**
	b).	Explain Two-level unitary gates	**4**	**2**	**5**
		OR			
9.	**a).**	Explain the significance of CNOT gates in constructing quantum circuits.	**4**	**2**	**5**
	b).	Explain the quantum circuit model of computation with a block diagram.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Explain quantum search algorithm and its performance.	**5**	**3**	**5**
	b).	Describe quantum error-correcting codes with examples.	**5**	**3**	**5**
		OR			
11.	**a).**	Explain the concept and function of the Shor code.	**5**	**2**	**5**
	b).	What is the quantum Hamming bound? Discuss degenerate codes.	**5**	**3**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3211
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		NOSQL DATABASE			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	What does NoSQL stand for?	**1**	**1**	**2**
	b).	Name any two types of NoSQL databases.	**1**	**1**	**2**
	c).	Define sharding in NoSQL databases	**2**	**1**	**2**
	d).	Differentiate between single server and distributed server architecture in databases	**2**	**2**	**2**
	e).	What is a document in MongoDB?	**3**	**1**	**2**
	f).	Name two suitable use cases for document-oriented databases.	**3**	**2**	**2**
	g).	What is a column-family in Cassandra?	**4**	**1**	**2**
	h).	List two key differences between HBase and Cassandra.	**4**	**2**	**2**
	i).	What is a key-value store?	**5**	**1**	**2**
	j).	Explain how a graph database stores relationships.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain how the concept of impedance mismatch is addressed in NoSQL systems	**1**	**3**	**5**
	b).	Compare how concurrency is handled in traditional RDBMS and NoSQL databases.	**1**	**3**	**5**
		OR			
3.	**a).**	Apply the idea of application vs. integration databases with real-world examples.	**1**	**3**	**5**
	b).	Evaluate the emergence of NoSQL in the context of modern data requirements such as big data, real-time applications, and scalability.	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Compare relational databases and NoSQL databases with respect to scalability, schema flexibility, and consistency.	**2**	**2**	**5**
	b).	Explain the differences between master-slave replication and peer-to-peer replication in NoSQL databases. Explain the differences between master-slave replication and peer-to-peer replication in NoSQL	**2**	**3**	**5**

		databases.			
		OR			
5.	**a).**	Describe the structure and characteristics of column-family stores and how they differ from key-value stores.	**2**	**2**	**5**
	b).	Illustrate how combining sharding and replication improves data availability and fault tolerance in NoSQL systems.	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Design a document structure in MongoDB to store customer orders in an online shopping application.	**3**	**3**	**5**
	b).	Demonstrate how MongoDB scales horizontally using sharding with a real-world use case.	**3**	**3**	**5**
		OR			
7.	**a).**	Apply the concept of eventual consistency in MongoDB and explain its impact on high-availability systems.	**3**	**3**	**5**
	b).	Create a query in MongoDB to retrieve blog posts based on tags and date and explain how indexes improve query performance.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Design a column-family structure in Cassandra for storing time-series temperature sensor data.	**4**	**3**	**5**
	b).	Apply the concept of scalability in HBase to a real-world application like social media analytics.	**4**	**3**	**5**
		OR			
9.	**a).**	Demonstrate how Apache Cassandra ensures high availability using its replication strategy.	**4**	**3**	**5**
	b).	Develop a use case where expiring columns (TTL – Time To Live) in Cassandra are effectively used.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Design a key-value data structure in Riak for storing session information of an e-commerce website	**5**	**3**	**5**
	b).	Apply graph database modeling in Neo4j to represent a university system with students, courses, and professors.	**5**	**3**	**5**
		OR			
11.	**a).**	Develop a use case using Neo4j to recommend friends in a social networking application.	**5**	**3**	**5**
	b).	Illustrate how a key-value database like Riak handles distributed storage and consistency across nodes	**5**	**3**	**5**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3212
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		CLOUD COMPUTING			
		For AIDS			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	List and explain the ethical issues in cloud computing.	**1**	**2**	**2**
	b).	Elaborate on the peer-to-peer systems.	**1**	**2**	**2**
	c).	Distinguish between Parallel Computing and Distributed Computing	**2**	**2**	**2**
	d).	Explain the terms logical clocks and message delivery rules.	**2**	**2**	**2**
	e).	Major challenges for cloud computing Applications of Cloud Computing	**3**	**2**	**2**
	f).	Mention virtual machine monitors, virtual machines,	**3**	**2**	**2**
	g).	What is resource bundling?	**4**	**2**	**2**
	h).	Explain general parallel file systems.	**4**	**2**	**2**
	i).	What is the role of Virtual machine security.	**5**	**2**	**2**
	j).	Elaborate Share Point Services.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Explain about Network-centric computing and content?	**1**	**2**	**5**
	b).	Explain the delivery models of cloud computing.	**1**	**2**	**5**
		OR			
3.	**a).**	What are the Ethical issues, Vulnerabilities, and Major challenges for cloud computing?	**1**	**2**	**5**
	b).	Describe Concurrency and model concurrency with Petri Nets.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Explain Amazon, Microsoft Windows Azure Service Providers.	**2**	**2**	**5**
	b).	Explain the Open-Source Software Platforms.	**2**	**2**	**5**
		OR			
5.	**a).**	Explain about various architectural styles.	**2**	**2**	**5**
	b).	Discuss about Zookeeper?	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Explain Layering and virtualization.	**3**	**3**	**5**
	b).	Virtual Machine and Virtual Machine Monitor (VMM / hypervisor).	**3**	**3**	**5**

		OR			
7.	**a).**	Full virtualization and paravirtualization.	**3**	**3**	**5**
	b).	Hardware Support for Virtualization.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Elaborate on the distributed file systems.	**4**	**3**	**5**
	b).	Discuss the Amazon Simple Storage Service.	**4**	**2**	**5**
		OR			
9.	**a).**	Explain the Virtual machine security.	**4**	**2**	**5**
	b).	Elaborate on the Cloud security risks.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Describe the Cloud-based simulation of a Distributed trust algorithm.	**5**	**3**	**5**
	b).	Compare and contrast Google App Engine and Amazon AWS.	**5**	**3**	**5**
		OR			
11.	**a).**	Explain about Amazon simple storage service (S3).	**5**	**2**	**5**
	b).	Elaborate on the Google Web Toolkit.	**5**	**3**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code:B23AD3213
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
SOCIAL MEDIA ANALYTICS					
For AIDS					
Time: 3 Hrs.					**Max. Marks: 70 M**
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
					10 x 2 = 20 Marks
			CO	**KL**	**M**
1.	**a).**	Explain the concept of Web 2.0.	**1**	**2**	**2**
	b).	Describe the use of Facebook as a platform for business marketing.	**1**	**2**	**2**
	c).	Explain the purpose of social media analytics.	**2**	**2**	**2**
	d).	Summarize the advantages of using analytics tools.	**2**	**2**	**2**
	e).	Describe the different types of text data in social media.	**3**	**2**	**2**
	f).	Identify challenges in analyzing social media text.	**3**	**2**	**2**
	g).	Describe tools used for analyzing user actions on social media.	**4**	**2**	**2**
	h).	Identify common actions tracked in social media analytics.	**4**	**2**	**2**
	i).	Classify the different types of hyperlinks in social media.	**5**	**2**	**2**
	j).	Explain the role of hyperlink analysis in optimizing web traffic.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Describe the core characteristics of social media and their impact on user engagement.	**1**	**2**	**5**
	b).	Classify the different types of social media and provide examples of each.	**1**	**2**	**5**
		OR			
3.	**a).**	Summarize the ways businesses can use Facebook for branding and customer interaction.	**1**	**2**	**5**
	b).	Describe the role of content communities in facilitating knowledge and media sharing.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Compare traditional business analytics and social media analytics with examples.	**2**	**2**	**5**
	b).	Describe the seven layers of social media analytics and their significance.	**2**	**2**	**5**
		OR			
5.	**a).**	Describe key challenges faced while implementing social media analytics.	**2**	**2**	**5**
	b).	Summarize the outcomes of the case study "The Underground	**2**	**2**	**5**

		Campaign That Scored Big".			
		UNIT-3			
6.	**a).**	Demonstrate the text analytics process using an example from a Facebook product review.	**3**	**3**	**5**
	b).	Use text analytics tools to demonstrate how sentiment analysis is performed.	**3**	**3**	**5**
		OR			
7.	**a).**	Implement a basic text classification process for analyzing social media comments.	**3**	**3**	**5**
	b).	Demonstrate insights gained from the case study “Tapping Into Online Customer Opinions”.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Describe the concept of social media actions analytics with examples.	**4**	**2**	**5**
	b).	Explain the importance of tracking user actions like likes, shares, and comments.	**4**	**2**	**5**
		OR			
9.	**a).**	Describe the ways businesses use action analytics to improve user engagement.	**4**	**2**	**5**
	b).	Describe the use of action analytics by Cover-More Group in their case study.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Demonstrate how hyperlink data can be used to evaluate content performance.	**5**	**3**	**5**
	b).	Implement a process to monitor internal and external links using analytics tools.	**5**	**3**	**5**
		OR			
11.	**a).**	Implement a link popularity analysis to rank pages shared on social platforms.	**5**	**3**	**5**
	b).	Apply the findings of the case study “Hyperlinks and Viral YouTube Videos” to a new scenario.	**5**	**3**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

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