					Course Code:B23IT3101
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		ADVANCED JAVA			
		For IT			
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).**	Write the syntax to establish a database connection using Driver Manager in JDBC.	**1**	**2**	**2**
	b).	Define the purpose of the ResultSet interface in JDBC	**1**	**2**	**2**
	c).	List any two differences between a Web Server and an Application Server.	**2**	**2**	**2**
	d).	Explain the role of a web container in a J2EE application	**2**	**2**	**2**
	e).	What is the role of ServletContext in a web application?	**3**	**2**	**2**
	f).	What is the significance of the service() method in the Servlet Lifecycle?	**3**	**2**	**2**
	g).	Write any two implicit objects used in JSP and their purposes.	**4**	**2**	**2**
	h).	Explain the purpose of the page directive in JSP	**4**	**2**	**2**
	i).	List any two annotations used in Spring MVC and mention their usage.	**5**	**2**	**2**
	j).	Describe the role of the @Autowired annotation in Spring	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Describe how batch updates in JDBC improve performance compared to individual updates, and provide an example scenario where batch updates would be beneficial.	**1**	**3**	**7**
	b).	Explain the role of the JDBC architecture	**1**	**2**	**3**
		OR			
3.		Create a JDBC application to perform CRUD operations (Create, Read, Update, Delete) on a "Courses" table with columns course_id, course_name, and credits.	**1**	**3**	**10**
		UNIT-2			
4.	**a).**	Design a basic directory structure of a web application using J2EE.	**2**	**2**	**6**
	b).	What are the key differences between HTTP GET and POST methods? Explain how these methods are used in a J2EE web	**2**	**2**	**4**

		application.			
		OR			
5.		Given a typical web application request (e.g., submitting a user registration form), trace the sequential steps involved in its processing by a web server and a web container.	**2**	**3**	**10**
		UNIT-3			
6.	**a).**	Explain the Servlet Life Cycle and the purpose of the init, service, and destroy methods in a servlet.	**3**	**2**	**5**
	b).	Describe how session tracking is achieved in servlets using cookies and HTTP session, and compare their advantages and limitations.	**3**	**2**	**5**
		OR			
7.		Write a servlet that uses RequestDispatcher to forward a user's login request to a welcome page if credentials are valid, or redirects to an error page using send Redirect if invalid.	**3**	**3**	**10**
		UNIT-4			
8.	**a).**	Explain the differences between JSP and Servlets, and describe the role of JSP directives in controlling page behaviour.	**4**	**2**	**6**
	b).	Describe the purpose of Expression Language (EL) in JSP and how implicit objects (e.g., request, session) are accessed using EL.	**4**	**2**	**4**
		OR			
9.		Write a JSP page that uses JSTL to display a table of products from a List stored in the session, including columns for product_id, name, and price.	**4**	**3**	**10**
		UNIT-5			
10	**a).**	Describe how dependency injection is implemented in Spring using annotations like @Autowired, and explain the differences between constructor injection and setter injection.	**5**	**2**	**7**
	b).	Describe the role and significance of a "bean" in the context of the Spring Framework.	**5**	**2**	**3**
		OR			
11	**a).**	What is the primary benefit of utilizing the Spring DAO module for database operations?	**5**	**2**	**5**
	b).	Describe how Spring's transaction management ensures data consistency in database operations.	**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: B23IT3102	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. I Semester MODEL QUESTION PAPER					
COMPUTER NETWORKS					
For IT					
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	**CO**	**KL**	**M**
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 it detects 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. 5M	**5**	**2**	**5**
		OR			
11.	**a).**	Discuss the features of HTTP and 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: B23IT3103

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

III B.Tech. I Semester MODEL QUESTION PAPER

AUTOMATA THEORY & COMPILER DESIGN

For IT

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

Answer Question No.1 compulsorily

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

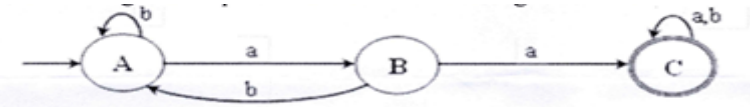
Assume suitable data if necessary

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	CO	KL	M
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**	**2**	**5**
	b).	Explain the simple code generation algorithm with example.	**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: B23IT3104	
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		OBJECT ORIENTED ANALYSIS AND DESIGN			
		For IT			
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 usecase 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	**CO**	**KL**	**M**
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 diagram and object diagram with an example.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Illustrate usecase 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: B23IT3105
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		CYBER SECURITY			
		For IT			
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).**	State any two examples for internal and external threats.	**1**	**1**	**2**
	b).	Summarize common HTTP exploits.	**1**	**2**	**2**
	c).	Identify four measures to ensure availability.	**2**	**2**	**2**
	d).	Name the three states of data with example for each.	**2**	**2**	**2**
	e).	Identify four examples of logical access controls.	**3**	**2**	**2**
	f).	Give an example for extended ACL.	**3**	**2**	**2**
	g).	Name any four threats to cloud computing.	**4**	**1**	**2**
	h).	Name any four security policies.	**4**	**1**	**2**
	i).	Define penetration testing.	**5**	**1**	**2**
	j).	Identify the four risk mitigation strategies.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**a).**	Discuss TCP and UDP Vulnerabilities and attacks.	**1**	**2**	**5**
	b).	Explain SQL injections with examples.	**1**	**3**	**5**
		OR			
3.	**a).**	Discuss various attacks targeting the IP vulnerabilities.	**1**	**2**	**5**
	b).	Summarize how can you mitigate common network attacks.	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Differentiate host-based and network-based protection.	**2**	**3**	**5**
	b).	Explain the Cyber Security cube.	**2**	**2**	**5**
		OR			
5.	**a).**	Explain the BYOD policy.	**2**	**2**	**5**
	b).	Suggest few physical security methods to be taken in an organization.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Summarize the threats on Embedded and IoT devices.	**3**	**3**	**5**

	b).	List and discuss various access control models.	**3**	**2**	**5**
		OR			
7.	**a).**	List and summarize various types of firewalls.	**3**	**3**	**5**
	b).	Explain ZPF.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Discuss about the top threats on cloud computing.	**4**	**3**	**5**
	b).	Explain the types of security data.	**4**	**2**	**5**
		OR			
9.	**a).**	Identify any five types of security tests and give one example for each.	**4**	**3**	**5**
	b).	Summarize the phases of penetration testing.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Discuss with examples sources of threat intelligence.	**5**	**2**	**5**
	b).	Explain Common Vulnerability Scoring System (CVSS).	**5**	**2**	**5**
		OR			
11.	**a).**	Explain weaponization and delivery steps in the cyber kill chain.	**5**	**2**	**5**
	b).	Explain the diamond model of intrusion analysis.	**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: B23IT3106	
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		ARTIFICIAL INTELLIGENCE			
		For IT			
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).**	Name two significant milestones in the history of AI.	**1**	**1**	**2**
	b).	What is the role of AI in autonomous vehicles?	**1**	**2**	**2**
	c).	What is backtracking in constraint satisfaction?	**2**	**1**	**2**
	d).	Define alpha and beta in the context of alpha-beta pruning.	**2**	**1**	**2**
	e).	What is a semantic tableau in propositional logic?	**3**	**1**	**2**
	f).	Explain resolution refutation in propositional logic.	**3**	**2**	**2**
	g).	Define extended semantic networks for knowledge	**4**	**1**	**2**
	h).	Define conditional probability, write its equation.	**4**	**1**	**2**
	i).	Name any three typical Expert Systems and their applications.	**5**	**1**	**2**
	j).	Define Hierarchical Planning.	**5**	**1**	**2**
				5 x 10 = 50 Marks	
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Describe the evolution of AI from its inception to the present day.	**1**	**2**	**5**
	b).	What are intelligent agents? Describe different types intelligent agents with examples.	**1**	**2**	**5**
		OR			
3.	**a).**	Describe the problem formulation and solution approach for Tic- Tac-Toe	**1**	**2**	**5**
	b).	Discuss the applications of AI in healthcare, education, and finance.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Describe the iterative deepening A* algorithm and its advantages over A*.	**2**	**2**	**5**
	b).	Apply the principles of Constraint Satisfaction Problems (CSP) to solve the equation BASE+BALL=GAMES. Demonstrate the steps involved in finding the solution	**2**	**3**	**5**
		OR			
5.	**a).**	What is general problem solving? Explain its components with a	**2**	**2**	**5**

		suitable example			
	b).	Justify the use of Alpha-Beta Pruning in optimizing the Minimax Algorithm for game playing.	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Describe the natural deduction system in propositional logic. Explain the rules of inference with examples.	**3**	**3**	**5**
	b).	Use resolution refutation to prove the following statement is unsatisfiable:(PvQ),(PvR),(Qv R)	**3**	**3**	**5**
		OR			
7.	**a).**	Describe fuzzy logic and its components, including fuzzy sets, membership functions, and linguistic variables.	**3**	**3**	**5**
	b)	Prove the validity of the following argument using natural deduction:Premises • Premises: P $\Longrightarrow$ Q $\Longrightarrow$R, P • Conclusion: R	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Describe different approaches to Knowledge Representation, including Semantic Networks,Frames, and Logic-based Representation. Compare their advantages and disadvantages.	**4**	**2**	**5**
	b)	Write about Conceptual Dependency theory. How will it be used for Knowledge Representation?	**4**	**3**	**5**
		OR			
9.	**a).**	Represent the following knowledge using Frames: "John is a student. He studies Computer Science. He is 20 years old and lives in Hyderabad."	**4**	**2**	**5**
	b)	With an example, Explain Dempster-Shafer Theory in detail	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Describe the main components of any Planning System with a neat diagram.	**5**	**2**	**5**
	b).	Explain Reactive Systems in AI. How are they different from Deliberative Planning Systems?	**5**	**3**	**5**
		OR			
11.	**a).**	Explain the different phases involved in building an Expert system.	**5**	**3**	**5**
	b).	Illuminate the concept of Planning in Artificial Intelligence. Why W is it important in problem-solving?	**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: B23IT3107	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. I Semester MODEL QUESTION PAPER					
MICROPROCESSORS & MICROCONTROLLERS					
For IT					
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 any four features of the 8085 microprocessors.	**1**	**1**	**2**
	b).	What is the function of the accumulator in 8085?	**1**	**2**	**2**
	c).	Define stack and its use in 8085.	**2**	**1**	**2**
	d).	What are the different types of interrupts in 8085?	**2**	**1**	**2**
	e).	Define memory-mapped I/O.	**3**	**1**	**2**
	f).	What is the role of ALE and IO/M signals in 8085?	**3**	**2**	**2**
	g).	What are the modes of operation of 8255?	**4**	**1**	**2**
	h).	Write the control word format of 8253.	**4**	**1**	**2**
	i).	List any two differences between microprocessor and microcontroller.	**5**	**1**	**2**
	j).	List the features of 8051 microcontroller	**5**	**1**	**2**
				5 x 10 = 50 Marks	
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain the internal architecture of 8085 microprocessor with a neat block diagram.	**1**	**2**	**5**
	b).	Describe various addressing modes used in 8085 with suitable examples.	**1**	**3**	**5**
		OR			
3.	**a).**	Explain the timing diagram of STA 2050H instruction.	**1**	**3**	**5**
	b).	Describe the function of stack and subroutine with an example.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Describe the procedure to interface an 8K RAM with 8085.	**2**	**3**	**5**
	b).	Discuss the importance and methods of address decoding.	**2**	**2**	**5**
		OR			
5.	**a).**	Explain the memory interfacing concepts with 8085 using 2732 EPROM and R/W memory.	**2**	**3**	**5**
	b).	Differences between memory mapped IO and peripheral IO	**2**	**2**	**5**

		UNIT-3			
6.	**a).**	Explain the block diagram and control word format of 8255 Programmable Peripheral Interface.	**3**	**2**	**5**
	b).	Describe the interrupt handling mechanism of 8259A with a block diagram.	**3**	**2**	**5**
		OR			
7.	**a).**	Discuss the block diagram and mode selection of 8253/54 Timer.	**3**	**2**	**5**
	b)	Explain the interfacing 8259 with the 8085 microprocessors.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Explain the pin functions of 8086 in minimum mode.	**4**	**2**	**5**
	b)	Write short notes segmented memory in 8086?	**4**	**2**	**5**
		OR			
9.	**a).**	Explain the internal architecture of 8086 microprocessor with a neat block diagram.	**4**	**2**	**5**
	b)	Compare maximum and minimum mode of 8086 operation.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Explain the Programming model of 8051 with all the components	**5**	**2**	**5**
	b).	Explain the internal RAM and special function registers of 8051.	**5**	**2**	**5**
		OR			
11.	**a).**	Draw the internal architecture of 8051 microcontrollers".	**5**	**2**	**5**
	b).	Explain the internal ROM, and special function registers of 8051.	**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: B23IT3108
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. I Semester MODEL QUESTION PAPER			
		DATA WAREHOUSING & DATA MINING			
		For IT			
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 is 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	**CO**	**KL**	**M**
2.	**a).**	Differentiate between OLTP systems and OLAP systems in various aspects.	**1**	**2**	**5**
	b).	Draw three-tier architecture for a 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**

<table>
<tr><td></td><td>b).</td><td>Explain about various types of attributes with suitable examples.</td><td>2</td><td>2</td><td>5</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>5.</td><td>a).</td><td>Apply covariance and comment on the correlation of numeric attributes 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>2</td><td>3</td><td>5</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 the 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 the 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 the minimum support count required as 4.
<table>
<tr><td>TID</td><td>Items_Bought</td></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 wherever 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 the 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>
</table></td><td>4</td><td>3</td><td>7</td></tr>
</table>

<table>
<tr><td></td><td></td><td><table><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></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: B23IT3201
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		CLOUD COMPUTING			
		For IT			
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 different types of cloud.	**1**	**1**	**2**
	b).	List out the Major challenges of cloud computing.	**1**	**1**	**2**
	c).	Explain about Amazon simple storage service.	**2**	**1**	**2**
	d).	Define Software Licensing?	**2**	**1**	**2**
	e).	Define Virtualization.	**3**	**1**	**2**
	f).	Describe about the Virtual Machine Monitor.	**3**	**1**	**2**
	g).	State about Megastore.	**4**	**1**	**2**
	h).	Label VMM base security threats.	**4**	**1**	**2**
	i).	Explain Azure Services Platform.	**5**	**1**	**2**
	j).	Define Google App Engine.	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Describe network centric content and computing	**1**	**2**	**5**
	b).	Identify Desirable Properties of P2P Systems	**1**	**2**	**5**
		OR			
3.	**a).**	Discuss Cloud Computing delivery models and services with architecture.	**1**	**2**	**5**
	b).	Illustrate the concept of logical clocks with neat diagram	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Define the terms related to AWS: EBS, AMI, Cloud Watch, Auto Scaling.	**2**	**2**	**5**
	b).	Demonstrate about the energy use by data centres and its economic and ecological impact.	**2**	**2**	**5**
		OR			
5.	**a).**	Summarize the components of Azure cloud.	**2**	**2**	**5**
	b).	Discuss about Challenges for cloud, existing cloud applications and new opportunities.	**2**	**2**	**5**

		UNIT-3			
6.	**a).**	Virtualization simulates the interface to physical objects of any one of four means. Identify and define	**3**	**2**	**5**
	b).	Discuss about Fair Queueing process in cloud computing.	**3**	**2**	**5**
		OR			
7.	**a).**	Differentiate Full and Para-Virtualization.	**3**	**2**	**5**
	b).	Explain about the stability of two-level resource allocation architecture.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Differentiate distributed file systems, general parallel file systems. Google file system.	**4**	**2**	**5**
	b).	Explain about Amazon Simple Storage Service.	**4**	**2**	**5**
		OR			
9.	**a).**	Explain about cloud security risks.	**4**	**2**	**5**
	b).	Discuss about trust in cloud security.	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Discuss about security rules of transport and application layers protocols in EC2.	**5**	**2**	**5**
	b).	Illustrate how to use S3 in Java.	**5**	**2**	**5**
		OR			
11.	**a).**	Summarize the features of Google web tool kit.	**5**	**2**	**5**
	b).	Elaborate on share point services and Exchange Online.	**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: B23IT3202	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
CRYPTOGRAPHY AND NETWORK SECURITY					
For IT					
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	**CO**	**KL**	**M**
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**
		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			
	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: B23IT3203	
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		MACHINE LEARNING			
		For IT			
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	**1**	**1**	**2**
	f).	Outline the limitations of KNN	**3**	**2**	**2**
	g).	Compare SVM with SVR	**3**	**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	**CO**	**KL**	**M**
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**	**2**	**10**
		OR			
5.	**a).**	Explain about regularization and its types	**2**	**2**	**5**
	b).	Summarize the importance of logistic regression	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Outline Binary classifier,Multi class classifier,Multi label classification and imbalanced classification	**2**	**2**	**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>2</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>4</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-4</td><td></td><td></td><td></td></tr>
<tr><td>8.</td><td>a).</td><td>Summarize Ensembling learning technics</td><td>4</td><td>2</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>Analyze how PCA reduces dimensionality while retaining the maximum variance in the data.</td><td>3</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>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>3</td><td>3</td><td>5</td></tr>
<tr><td></td><td>b).</td><td>Explain reinforcement learning and its types</td><td>4</td><td>2</td><td>5</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>Explain the basic structure of an Artificial Neural Network (ANN) .</td><td>4</td><td>2</td><td>5</td></tr>
<tr><td></td><td>b).</td><td>Analyze how the Backpropagation algorithm updates the weights to minimize the error during the training process.</td><td>4</td><td>3</td><td>5</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: B23IT3204
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		SOFTWARE TESTING METHODOLOGIES			
		For IT			
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).**	Differentiate between effective and exhaustive software testing.	**1**	**2**	**2**
	b).	Explain any two software testing methodologies.	**1**	**2**	**2**
	c).	Identify Boundary Value Analysis in black-box testing?	**2**	**1**	**2**
	d).	Define Logic Coverage criterion in white-box testing?	**2**	**1**	**2**
	e).	List some advantages of using Inspections in software testing?	**3**	**1**	**2**
	f).	Explain the purpose of Integration Testing.	**3**	**2**	**2**
	g).	Define test suite prioritization, and why is it important?	**4**	**1**	**2**
	h).	Describe any two debugging techniques.	**4**	**2**	**2**
	i).	List some key guidelines for effective automated testing.	**5**	**1**	**2**
	j).	Discuss the major challenges in testing web-based software?	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain the primary goals of software testing, and how does psychology play a role in the testing process?	**1**	**2**	**5**
	b).	Explain different validation techniques with examples.	**1**	**2**	**5**
		OR			
3.	**a).**	Discuss different software testing methodologies and their advantages and disadvantages.	**1**	**2**	**5**
	b).	Explain various verification activities performed during the software development life cycle.	**1**	**2**	**5**
		UNIT-2			
4.		Explain the concept of Black Box Testing and discuss its importance in software testing.	**2**	**2**	**10**
		OR			
5.		Explain Data Flow Testing and its significance in detecting software anomalies.	**2**	**2**	**10**

		UNIT-3			
6.	**a).**	Define regression testing. Explain different types of regression testing.	**3**	**2**	**6**
	b).	Discuss the objects of regression testing	**3**	**2**	**4**
		OR			
7.	**a).**	Define functional testing? How does it ensure that software meets user requirements?	**3**	**2**	**5**
	b).	Define unit testing? Explain its role in software quality assurance	**3**	**2**	**5**
		UNIT-4			
8.		Discuss the importance of minimizing a test suite. What are the key benefits of test suite minimization?	**4**	**2**	**10**
		OR			
9.		Explain software quality metrics? Discuss different types of metrics used to measure software quality.	**4**	**2**	**10**
		UNIT-5			
10.	**a).**	Explain the different categories of testing tools with examples.	**5**	**2**	**6**
	b).	Differentiate between testing object-oriented software and traditional procedural software?	**5**	**2**	**4**
		OR			
11.	**a).**	Summarize unique challenges faced in mobile application testing, and how can they be addressed?	**5**	**2**	**5**
	b).	Distinguish between web-based and web-enabled applications?	**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: B23IT3205	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
AUGMENTED REALITY & VIRTUAL REALITY					
For IT					
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).**	Describe augmented reality?	**1**	**2**	**2**
	b).	Discuss about any two Mobile Sensors Applications	**1**	**2**	**2**
	c).	Compare Output Modalities and Input Modalities	**2**	**2**	**2**
	d).	Explain briefly Scene Graphs?	**2**	**2**	**2**
	e).	Explain about Basic Behaviour of Light	**3**	**2**	**2**
	f).	Describe about Viewing Transformations	**3**	**2**	**2**
	g).	Elaborate any two Types of Eye Movements	**3**	**2**	**2**
	h).	Brief about colour Visual Rendering?	**4**	**2**	**2**
	i).	Explain a Virtual World?	**4**	**2**	**2**
	j).	Describe the Auditory Rendering	**4**	**2**	**2**
				5 x 10 = 50 Marks	
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain augmented reality with examples.	**1**	**2**	**10**
		OR			
3.	**a).**	Describe Multimodal Displays with an example	**1**	**2**	**5**
	b).	Discuss the Characteristics of Tracking Technology	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Illustrate Virtual User Interfaces on Real Surfaces.	**2**	**2**	**5**
	b).	Explain about Hardware and software Requirements of AR	**2**	**2**	**5**
		OR			
5.	**a).**	Outline the applications of augmented reality in detail	**2**	**2**	**5**
	b).	Outline the Dataflow Architecture in AR with an example	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Explain Human Physiology and Perception in VR.	**3**	**2**	**10**
		OR			

7.	**a).**	Discuss about different Types of Aberrations in VR	**3**	**2**	**5**
	b).	Detail about axis-angle representations of rotation with an example.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Explain the Key Aspects of Visual Perception in VR	**3**	**2**	**5**
	b).	Discuss the Photoreceptors with a diagram.	**3**	**2**	**5**
		OR			
9.	**a).**	Summarize Latency and Frame Rates in VR	**4**	**2**	**5**
	b).	Explain the positive and negative Distortion	**4**	**2**	**5**
		UNIT-5			
10.	**a).**	Explain the Audio of physiology of hearing with a diagram .	**4**	**2**	**10**
		OR			
11.	**a).**	Describe the Key Aspects of Social Interaction with an example	**4**	**2**	**5**
	b)	Explain the applications of virtual reality in detail	**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: B23IT3206
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
DEVOPS					
For IT					
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).**	Detail the DevOps lifecycle with a simple example.	**1**	**2**	**2**
	b).	Describe the key principles of DevOps?	**1**	**2**	**2**
	c).	Discuss Why is version control important in software development?	**2**	**2**	**2**
	d).	Explain how unit testing supports the CI/CD processes?	**2**	**2**	**2**
	e).	Describe the role of Jenkins in build automation?	**3**	**2**	**2**
	f).	Elaborate the purpose of scheduling builds in Jenkins?	**3**	**2**	**2**
	g).	Explain how DockerFile help in container creation?	**4**	**2**	**2**
	h).	Discuss the key features of Selenium for automated testing?	**4**	**2**	**2**
	i).	Discuss the purpose of Ansible in DevOps automation?	**5**	**2**	**2**
	j).	Compare Puppet and Chef in configuration management?	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Describe the DevOps architecture and its main components.	**1**	**2**	**5**
	b).	List common DevOps tools and explain their use across different stages of the DevOps lifecycle.	**1**	**2**	**5**
		OR			
3.	**a).**	Discuss about build automation and how does it benefit the development process?	**1**	**2**	**5**
	b).	Compare Scrum and Kanban models used in DevOps project management	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Discuss about version control? Explain its importance in modern software development.	**2**	**2**	**5**
	b).	Elaborate the basic Git workflow including commit, push, and pull operations.	**2**	**2**	**5**
		OR			
5.	**a).**	Justify the role of unit testing and its impact on software quality.	**2**	**2**	**5**

	b).	Describe how SonarQube helps in maintaining code quality?	**2**	**2**	**5**
		UNIT-3			
6.	**a).**	Apply the concept of Jenkins pipelines to automate the build and test process of a Java project. Explain the steps.	**3**	**3**	**5**
	b).	Create a Jenkins freestyle project that includes Git integration and test execution using JUnit.	**3**	**3**	**5**
		OR			
7.	**a).**	Write a simple pipeline using Jenkinsfile that includes stages: build, test, and deploy.	**3**	**3**	**5**
	b).	Apply the concept of user roles in Jenkins to set up user management and access control in a CI pipeline.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Apply the concept of Continuous Delivery to automate deployment of a web application after successful testing.	**4**	**3**	**5**
	b).	Illustrate the steps to push a Docker image to Docker Hub after successful build and test.	**4**	**3**	**5**
		OR			
9.	**a).**	Apply Docker commands to manage containers, such as creating, listing, and removing them. Provide an example.	**4**	**3**	**5**
	b).	Write a Selenium script in Java to test login functionality of a sample website.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Demonstrate writing a basic Ansible playbook to install and start Apache web server on a remote server.	**5**	**3**	**5**
	b).	Demonstrate the use of ConfigMaps in Kubernetes to manage configuration data separately from code.	**5**	**3**	**5**
		OR			
11.	**a).**	Demonstrate the deployment of a simple application on OpenShift using DeploymentConfig (DC) and ConfigMaps	**5**	**3**	**5**
	b).	Apply Puppet or Chef to automate configuration of a multi-node system. Explain with an 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: B23IT3207
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		GENERATIVE AI			
		For IT			
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 generative modeling in artificial intelligence.	**1**	**1**	**2**
	b).	List any two types of generative models.	**1**	**1**	**2**
	c).	What is a language model?	**2**	**1**	**2**
	d).	Name any two transformer-based text generation models.	**2**	**1**	**2**
	e).	Expand the acronym GAN.	**3**	**1**	**2**
	f).	Mention any two applications of image generation models.	**3**	**1**	**2**
	g).	What is CycleGAN used for?	**4**	**1**	**2**
	h).	Name any one generative model for music and one for painting.	**4**	**1**	**2**
	i).	Name any two open-source frameworks used in generative AI.	**5**	**1**	**2**
	j).	What is LangChain mainly used for in generative AI?	**5**	**1**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain the difference between generative and discriminative modeling in AI with examples.	**1**	**2**	**5**
	b).	Discuss the future directions and ethical challenges associated with generative AI.	**1**	**2**	**5**
		OR			
3.	**a).**	Describe various types of generative models such as GANs, VAEs, and autoregressive models.	**1**	**2**	**5**
	b).	Describe the importance of generative modeling in AI and machine learning.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Describe the architecture and working of transformer-based language models like GPT.	**2**	**2**	**5**
	b).	Apply prompt engineering strategies to improve text generation outputs.	**2**	***3***	**5**
		OR			
5.	**a).**	Explain the key building blocks of language models, including encoder-	**2**	**2**	**5**

		decoder and attention mechanisms.			
	b).	Explain Retrieval-Augmented Generation (RAG) and its application in multimodal LLMs.	**2**	**3**	**5**
		UNIT-3			
6.	a).	Describe the working of GANs and the adversarial training process.	**3**	**2**	**5**
	b).	Apply stable diffusion and transformer-based techniques like CLIP and DALL·E for image generation.	**3**	**3**	**5**
		OR			
7.	a).	Explain the role of encoder-decoder architectures in VAEs and diffusion models.	**3**	**2**	**5**
	b).	Illustrate how visual transformers (ViT) enhance the quality of generated images.	**3**	**3**	**5**
		UNIT-4			
8.	a).	Explain the concept of Neural Style Transfer and its applications in digital painting.	**4**	**2**	**5**
	b).	Apply MuseGAN or music-generating RNNs to synthesize new music patterns.	**4**	**3**	**5**
		OR			
9.	a).	Describe the architecture and use of CycleGANs for style and domain transformation.	**4**	**2**	**5**
	b).	Discuss the use of generative models in training autonomous agents using reinforcement learning.	**4**	**3**	**5**
		UNIT-5			
10.	a).	Describe the training and fine-tuning process of generative models using pre-trained architectures	**5**	**2**	**5**
	b).	Apply open-source frameworks like Hugging Face any generative AI project	**5**	**3**	**5**
		OR			
11.	a).	Explain the use of transfer learning in accelerating the development of generative models.	**5**	**2**	**5**
	b).	Illustrate the deployment pipeline of a generative vision model using Hugging Face or Google Copilot.	**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: B23IT3209	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
SOFTWARE PROJECT MANAGEMENT					
For IT					
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 software economics in the context of software development	**1**	**1**	**2**
	b).	List two ways to improve team effectiveness in software projects.	**1**	**1**	**2**
	c).	Give one example each of a management artifact and an engineering artifact.	**2**	**1**	**2**
	d).	Outline the objective of the inception phase in the software life cycle?	**2**	**2**	**2**
	e).	Explain the purpose of software process workflow.	**3**	**2**	**2**
	f).	Relate pragmatic planning importance in iterative software development?	**3**	**2**	**2**
	g).	Define Line of business(LOB)	**4**	**1**	**2**
	h).	List two key responsibilities of a Project Manager.	**4**	**1**	**2**
	i).	Define Scrum in the context of Agile.	**5**	**1**	**2**
	j).	List any 2 technological aspects important for DevOps adoption	**5**	**1**	**2**
				5 x 10 = 50 Marks	
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Outline the activities of software project management with an example.	**1**	**2**	**5**
	b).	Explain the limitations of the Waterfall model and discuss how it affects the performance of conventional software management.	**1**	**2**	**5**
		OR			
3.	**a).**	Compare the principles of conventional software engineering with those of modern software management	**1**	**2**	**5**
	b).	Identify the factors influencing software economics and explain how pragmatic cost estimation methods improve project planning.	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Illustrate software Life cycle phases.	**2**	**2**	**10**
		OR			
5.	**a).**	Differentiate between management artifacts, engineering artifacts, and programmatic artifacts with suitable examples for each.	**2**	**2**	**10**

		UNIT-3			
6.	**a).**	Compare between the management perspective and the technical perspective of model-based software architecture.	**3**	**2**	**6**
	b).	Demonstrate about iteration workflow.	**3**	**2**	**4**
		OR			
7.	**a).**	Identify the different types of checkpoints in the software development process.	**3**	**3**	**10**
		UNIT-4			
8.	**a).**	Identify the key building blocks of process automation in software development.	**4**	**3**	**5**
	b).	Explain the components of the project environment.	**4**	**2**	**5**
		OR			
9.	**a).**	Outline the seven-core metrics used in software project control.	**4**	**2**	**10**
		UNIT-5			
10.	**a).**	Describe the Scrum framework and explain how organizations can adopt Scrum using different patterns.	**5**	**2**	**10**
		OR			
11.	**a).**	Utilize the DevOps ecosystem and explain how its different elements interact to support agile software delivery.	**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: B23IT3210	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
MOBILE ADHOC NETWORKS(PE-III)					
For IT					
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 a MANET with a cellular network.	**1**	**2**	**2**
	b).	List any four applications of Ad Hoc Networks.	**1**	**2**	**2**
	c).	Explain the reasons for poor performance of conventional TCP in Ad Hoc networks.	**2**	**2**	**2**
	d).	Discuss the factors that make routing more difficult in Ad Hoc networks compared to wired networks.	**2**	**2**	**2**
	e).	Explain the importance of key management in wireless security.	**3**	**2**	**2**
	f).	Discuss about secure routing and why is it needed in MANETs?	**3**	**2**	**2**
	g).	Explain the importance of low energy usage in sensor networks?	**4**	**2**	**2**
	h).	Describe the process of data collection and transmission in sensor networks.	**4**	**2**	**2**
	i).	Describe the role of TinyOS in a sensor network.	**5**	**2**	**2**
	j).	Explain the role of NS-2 in simulating sensor networks.	**5**	**2**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Explain the characteristics of Ad Hoc Networks with suitable examples.	**1**	**2**	**5**
	b).	Explain issues and challenges faced by MANETs.	**1**	**2**	**5**
		OR			
3.	**a).**	Discuss the major issues to consider while designing MAC protocols for Ad Hoc networks?	**1**	**2**	**5**
	b).	Describe the classification of MAC protocols used in Ad Hoc Wireless Networks.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Demonstrate the application of different types of transport layer protocols in mobile Ad Hoc networks.	**2**	**3**	**5**
	b).	Demonstrate the operational differences between topology-based and position-based routing protocols.	**2**	**3**	**5**

		OR			
5.	**a).**	Apply the classification of TCP protocols in MANETs to explain how each type helps to solve problems like mobility or packet loss.	**2**	**3**	**5**
	b).	Use suitable strategies to solve the challenges faced by TCP in Ad Hoc wireless networks.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Explain the importance of security in Ad Hoc Wireless Networks.	**3**	**2**	**5**
	b).	Discuss the main issues and challenges involved in providing security for Ad Hoc Wireless Networks.	**3**	**2**	**5**
		OR			
7.	**a).**	Explain the different types of network security attacks in MANETs.	**3**	**2**	**5**
	b).	Describe the role of Intrusion Detection Systems in securing Ad Hoc Wireless Networks.	**3**	**2**	**5**
		UNIT-4			
8.	**a).**	Demonstrate the use of the Mica Mote to enhance the efficiency of a wireless sensor network.	**4**	**3**	**5**
	b).	Implement a data retrieval strategy for a WSN with limited power and bandwidth resources.	**4**	**3**	**5**
		OR			
9.	**a).**	Demonstrate the impact of design issues such as power, size, and cost on sensor network deployment.	**4**	**3**	**5**
	b).	Apply dynamic routing techniques in WSNs to handle frequent topology changes.	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Summarize the key management techniques used in WSNs.	**5**	**2**	**5**
	b).	Discuss the ways in which LA-TinyOS improves upon standard TinyOS.	**5**	**2**	**5**
		OR			
11.	**a).**	Explain the role of secure data aggregation in protecting data in WSNs.	**5**	**2**	**5**
	b).	Discuss the working of TOSSIM as a simulator for WSN applications.	**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: B23IT3211
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		III B.Tech. II Semester MODEL QUESTION PAPER			
		NATURAL LANGUAGE PROCESSING (PE-III)			
		For IT			
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	**CO**	**KL**	**M**
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	**2**	**3**	**5**

		PoS tagging methods through an example.			
	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 the Anaphora Resolution? Describe Hobbs and Centering Algorithms.	**5**	**2**	**5**
	b).	Describe the role of WordNet and FrameNet 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: B23IT3212	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
III B.Tech. II Semester MODEL QUESTION PAPER					
DISTRIBUTED OPERATING SYSTEMS (PE-III)					
For IT					
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 distributed operating systems.	**1**	**1**	**2**
	b).	Explain Remote Procedure Call (RPC) ?	**1**	**2**	**2**
	c).	Differentiate between logical clocks and physical clocks ?	**2**	**2**	**2**
	d).	Explain deadlocks in distributed operating systems ?	**2**	**2**	**2**
	e).	How to implement threads package in distributed operating systems ?	**3**	**1**	**2**
	f).	Compare processor allocation models ?	**3**	**2**	**2**
	g).	Explain caching and replication in distributed file systems ?	**4**	**2**	**2**
	h).	List out the semantics of file sharing in distributed file systems ?	**4**	**1**	**2**
	i).	What is Distributed Shared Memory (DSM) ?	**5**	**1**	**2**
	j).	Explain about bus, ring in distributed shared memory ?	**5**	**2**	**2**
				5 x 10 = 50 Marks	
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Discuss the semantics of RPC in the presence of failure.	**1**	**2**	**5**
	b).	Illustrate hardware architectures with the help of diagrams.	**1**	**2**	**5**
		OR			
3.	**a).**	Explain various choices of addressing, blocking in Client-Server communication ?	**1**	**2**	**5**
	b).	Explain various types of operating system and analyze its design issues?	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Design the Bully algorithm with the help of a diagram.	**2**	**3**	**5**
	b).	Implement Mutual Exclusion-Centralized Algorithm.	**2**	**3**	**5**
		OR			
5.	**a).**	Define Clock Synchronization. Differentiate logical clocks and physical clocks ?	**2**	**2**	**5**
	b).	Explain the system model for distributed mutual exclusion algorithm and identify the requirements ?	**2**	**2**	**5**

		UNIT-3			
6.	**a).**	Identify design issues for threads package and implement threads package with an example ?	**3**	**2**	**5**
	b).	Differentiate between Processor pool model and Hybrid model ?	**3**	**2**	**5**
		OR			
7.	**a).**	Explain various process allocation models ?	**3**	**2**	**5**
	b).	Explain the workstation model to organize multiple processors in a distributed system ?	**3**	**2**	**5**
		UNIT-4			
8.		Identify the semantics of file sharing and explain file usage, system structure ?	**4**	**2**	**10**
		OR			
9.	**a).**	Explain the different ways of replication ?	**4**	**2**	**5**
	b).	Explain Caching in Distributed File System implementation ?	**4**	**2**	**5**
		UNIT-5			
10.		Explain about Consistency Models ?	**5**	**2**	**10**
		OR			
11.	**a).**	Explain the working of Bus based multiprocessors ?	**5**	**2**	**5**
	b).	Explain Object based Distributed Shared Memory (DSM) ?	**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