Subject Code:20CS601PC	SET-I	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B.Tech.VI Semester Supply End Examinations, January-2024

Artificial Intelligence

Department of CSM

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Define an Agent?	2	CO1	L1
	b	Outline the characteristics of intelligent agent	2	CO1	L2
	c	Distinguish between prepositional & predicate logic	2	CO2	L4
	d	Define forward and backward chaining	2	CO2	L1
	e	Explain about generic knowledge-based agent.	2	CO3	L2
	f	What is Unification and Lifting?	2	CO3	L1
	g	How do you plan and act in Non-deterministic Domains?	2	CO4	L1
	h	Summarize the Algorithms for Planning with State-Space Search?	2	CO4	L2
	i	Demonstrate performing Inference Using Full Joint Distributions?	2	CO5	L2
	j	How do you Represent Knowledge in an Uncertain Domain?	2	CO5	L1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Explain Depth First Search and Breadth First search with Suitable examples.	5	CO1	L5
	b	Discuss A* algorithm with an example	5	CO1	L6
		OR			
3	a	Discuss Hill Climbing search method	5	CO1	L6
	b	Explain the local search algorithm with example.	5	CO1	L5
4	a	Differentiate propositional logic with FOL. List the inference rules along with suitable examples for first order logic	5	CO2	L4
	b	Elaborate the procedure to convert the formula in	5	CO2	L6

Subject Code:20CS601PC	SET-I	HT NO:			7	R					

		proportional logic into CNF. Convert the formula (~A->B)^(C^A)into its equivalent CNF representation.			
		OR			
5	a	Discus solutions for the map-coloring problem	5	CO2	L6
	b	Explain the syntactic elements of first-Order logic	5	CO2	L6
6	a	Interpret the limitations of Predicate logic as a tool for Knowledge representation? Illustrate through examples.	5	CO3	L5
	b	Classify Mental Events and Mental Objects in Knowledge Representation?	5	CO3	L4
		OR			
7	a	Develop logical representations for the following sentences suitable to use with Generalized Modus Ponens: (a) Offspring and parent are inverse relations (b) Every mammal has a parent. Draw the proof tree generated by an exhaustive back-ward chaining algorithm for the query ∃h Horse(h).	6	CO3	L6
	b	Justify reasoning with Default Information?	4	CO3	L5
8	a	Explain plan and act in Non-deterministic Domains and what are some examples of such domains?	5	CO4	L5
	b	Illustrate the working of Classical Planning and how does it work?	5	CO4	L4
		OR			
9	a	Evaluate the analysis of Planning approaches and what are the criteria for analysis?	5	CO4	L5
	b	Explain Hierarchical Planning and how does it differ from Classical Planning	5	CO4	L4
10	a	Explain the impact of uncertainty in probabilistic reasoning?	5	CO5	L5
	b	Computeinference Using full joint distributions and what are the advantages and disadvantages of this approach?	5	CO5	L4
		OR			
11	a	Explain Bayes' Rule and its utilization in probabilistic reasoning	5	CO5	L5
	b	Write in detail about Relational and First-Order Probability and how does it differ from other types of probability?	5	CO5	L6

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding** **L 3 : Applying** **L 4 : Analysing** **L 5 : Evaluating** **L 6 : Creating**

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Subject Code:20CS602PC	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B.Tech.VI Semester Supply End Examinations, January-2024

Compiler Design

Common to CSE, IT, CSM&CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	List compiler construction tools	2	CO1	L1
	b	What is the role of finite automata in compilation process?	2	CO1	L3
	c	What is meant by ambiguous grammar? Give an example	2	CO2	L2
	d	Differentiate between top-down and bottom-up parsing	2	CO2	L2
	e	Differentiate between synthesized and inherited attributes	2	CO3	L2
	f	Define L-attributed grammar	2	CO3	L4
	g	List the different storage allocation strategies	2	CO4	L3
	h	How can you identify a leader in a basic block	2	CO4	L2
	i	What is the role of flow graph in compilation	2	CO5	L4
	j	Differentiate local optimization and global optimization	2	CO5	L3

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.		Explain about different phases of compilation with an example	10	CO1	L3
		OR			
3	a	What is the role of lexical analyzer? Explain with an example	6	CO1	L3
	b	Explain different types of finite automata with examples	4	CO1	L2
4	a	Explain different error recovery strategies in syntax analysis	5	CO2	L3
	b	Eliminate left recursion for the following grammar $E \rightarrow E+T \mid T$ $T \rightarrow T*F \mid F$	5	CO2	L2

Subject Code:20CS602PC	SET-II	HT NO:			7	R					

		F → (e) \ id			
		OR			
5		Test whether the following grammar is LL(1) or not by constructing predictive parsing table S → iEtS \ iEtSeS \ a E → b	10	CO2	L4
6		What is 3-address code? Explain different ways of representing 3-address code for the following expression A = B * - C + B * - C	10	CO3	L3
		OR			
7	a	Write syntax directed definition for switch statements	6	CO3	L2
	b	Write the applications of syntax directed translation	4	CO3	L3
8	a	Explain about optimization of Basic Blocks	5	CO4	L3
	b	Explain about peephole optimization	5	CO4	L2
		OR			
9	a	Explain briefly about loop optimization techniques	5	CO4	L2
	b	What is DAG? Construct DAG for the following basic block D := B * C E := A + B B := B + C A := E – D	5	CO4	L4
10	a	Write the differences between machine dependent code optimization and machine independent code optimization	5	CO5	L2
	b	Explain about loops in flow graphs	5	CO5	L3
		OR			
11		Give an example to show how DAG is used for register allocation	10	CO5	L4

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code: 20CS502PC	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech.V Semester Regular& Supply End Examinations, January-2024

Computer Networks

Common to AIML, CSG, CSE, IT, CSM & CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Explain functionalities of Data link layer?	2	CO1	L2
	b	Define Internet and ARPANET?	2	CO1	L1
	c	What is Piggy Backing?	2	CO2	L1
	d	Classify error detection and correction methods?	2	CO2	L4
	e	What are the advantages of Adaptive Routing Algorithms?	2	CO3	L1
	f	What is Broadcasting algorithm?	2	CO3	L1
	g	Explain the functionalities of Transport layer?	2	CO4	L2
	h	Define Segmentation?	2	CO4	L1
	i	List any two services of Application Layer?	2	CO5	L1
	j	Illustrate HTTP	2	CO5	L2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	With a neat diagram explain the TCP/IP model in detail?	5	CO1	L2
	b	Compare Twisted pair and Coaxial Cable?	5	CO1	L4
		OR			
3	a	With a neat diagram explain the OSI reference model in detail?	5	CO1	L2
	b	Illustrate different types of Network Topologies?	5	CO1	L2
4	a	Explain about different types MAC Protocols?	5	CO2	L2
	b	Explain about Selective Repeat ARQ?	5	CO2	L2
		OR			
5	a	With an example explain the sliding window Flow control mechanism.	5	CO2	L2
	b	Explain about CSMA/CD protocols in detail with neat diagrams?	5	CO2	L2

Subject Code: 20CS502PC	SET-II	HT NO:			7	R					

6	a	Demonstrate Distance Vector routing algorithm with Suitable example?	5	CO3	L2
	b	Explain the operations of ARP an RARP with examples.	5	CO3	L2
		OR			
7	a	Illustrate in detail about IPv4 Packet format? Explain each field of IPv4 packet with a diagram?	5	CO3	L2
	b	Explain in brief about Multicast routing algorithm?	5	CO3	L2
8	a	Explain in detail about crash recovery in transport layer?	5	CO4	L2
	b	Discover what are the services provided by Transport layer to the Upper layer?	5	CO4	L4
		OR			
9	a	Explain in detail User datagram Protocol?	5	CO4	L2
	b	Conclude in brief about TCP connection establishment and connection release?	5	CO4	L5
10	a	Explain in brief about SNMP?	5	CO5	L2
	b	Describe with detailed explanation about sending and receiving e-mail. Justify Case study how the tool is used for providing Communication?	5	CO5	L2
		OR			
11	a	Illustrate Streaming Video and Audio?	5	CO5	L2
	b	Explain in detail WWW?	5	CO5	L2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code: 20CS513PE	SET-I	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. V Semester Regular& Supply End Examinations, January-2024

Data Analytics

Common to CSG,CSD&CSM

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	What is data Integration?	2	CO1	L1
	b	What is data Cleaning?	2	CO1	L1
	c	What is modelling in Data Analytics?	2	CO2	L1
	d	Explain various steps involved in analysis.	2	CO2	L2
	e	Define variable rationalization.	2	CO3	L2
	f	What is model building?	2	CO3	L1
	g	Why supervised learning.	2	CO4	L4
	h	What is pruning?	2	CO4	L1
	i	Write about data visualization?	2	CO5	L1
	j	Compare Bar chart and Histogram.	2	CO5	L4

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Discuss briefly various sources of generating data for data analytics.	5	CO1	L2
	b	What are missing and duplicate values?	5	CO1	L2
		OR			
3	a	Explain briefly about data pre-processing.	5	CO1	L2
	b	Discuss the need for pre-processing the data.	5	CO1	L2
4	a	How to impute missing data?	2	CO2	L2
	b	Discuss about the types of data and variables used in analytics.	8	CO2	
		OR			
5	a	Why is data Analytics important?	2	CO2	L5

Subject Code: 20CS513PE	SET-I	HT NO:			7	R					

	b	Define business modelling and discuss the need for business modelling.	8	CO2	L2
6	a	Explain the steps involved in constructing an efficient model.	5	CO3	L3
	b	Write a brief note on Model fit statistics.	5	CO3	L2
		OR			
7	a	Explain various types of data modelling techniques.	5	CO3	L2
	b	Discuss in detail about the different types of regression models.	5	CO3	L4
8	a	What is segmentation in data analysis?	5	CO4	L1
	b	Explain the techniques of segmentation.	5	CO4	L3
		OR			
9	a	What is unsupervised learning?	3	CO4	L1
	b	Explain types of unsupervised machine learning techniques.	7	CO4	L1
10	a	Write a short note on Chernoff face	3	CO5	L1
	b	Explain about geometric projection visualization techniques.	7	CO5	L4
		OR			
11	a	How is data visualization used?	3	CO5	L1
	b	Write useful ways to visualize your data with examples.	7	CO5	L2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code: 20DS501PC	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. V Semester Regular &Supply End Examinations, January-2024

Data Mining

Common to CSM, CSD, AIML&CSG

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	How data mining systems are classified.	2	CO1	L1
	b	Define Data Pre-Processing	2	CO1	L1
	c	Define Association Rule Measures	2	CO2	L1
	d	Explain Graph Pattern Mining	2	CO2	L2
	e	What is a Decision Tree?	2	CO3	L1
	f	Explain Lazy Learner Classification	2	CO3	L2
	g	Explain types of data used in Clustering?	2	CO4	L2
	h	List major Clustering Methods	2	CO4	L1
	i	What is Multimedia Data Mining?	2	CO5	L1
	j	Explain Precision and Recall measures.	2	CO5	L2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	What is Data Mining? Explain Data Mining Task Primitives	5	CO1	L2
	b	Explain the major issues in Data Mining.	5	CO1	L2
		OR			
3	a	Discuss in detail about the Data Mining Functionalities	5	CO1	L2
	b	What is Data Pre-Processing? Explain the various approaches used for Data Cleaning	5	CO1	L2
4	a	Define the terms frequent item sets, closed item sets and association rules.	4	CO2	L2

	b	Apply the following transaction data set that shows 6 transactions and list of items using Apriori Algorithm to find frequent itemset with min-support =2.	6	CO2	L3

T Id	List of items
001	I1,I3,I5,I7
002	I1,I5,I6,I7
003	I6,I7
004	I2,I3,I6,I7
005	I8,I1,I6
006	I1,I5,I8

OR

5	a	A database has the following five transactions. Let min_support = 60% and min_confidence = 80%.	6	CO2	L3

TID	**Items_bought**
T100	{M, O, N, K, E, Y}
T200	{D, O, N, K, E, Y}
T300	{M, A, K, E}
T400	{M, U, C, K, Y}
T500	{C, O, O, K, I, E}

Find all frequent item sets, using FP-Growth.

	b	How can we mine multilevel Association rules efficiently using concept hierarchies? Explain in detail.	4	CO2	L2
6	a	What is classification? Explain Bayesian classification with suitable example	4	CO3	L2
	b	What is Decision tree? With an example, briefly describe the algorithm for generating decision tree.	6	CO3	L2

OR

7	a	What are Bayesian classifiers? With an example, describe how to predict a class label using naïve Bayesian classification.	6	CO3	L2
	b	Explain about classifier accuracy? Explain the process of measuring the accuracy of a classifier?	4	CO3	L2
8	a	Describe how categorization of major clustering methods is being done.	6	CO4	L2
	b	Explain K-Means algorithm for following problem instance. A1(2,10), A2(2,5), A3(8,4), A4(5,8), A5(7,5), A6(6,4), A7(1,2), A8(4,9).	4	CO4	L3

OR

9	a	Given two objects represented by the tuples (22,1,42,10) and (20,0,36,8): (a) Compute the Euclidean Distance between the two objects. (b) Compute the Manhattan distance between the two objects.	6	CO4	L3

		(c) Compute the Minkowski distance between the two objects, using q = 3.			
	b	What is Outlier? Explain about the Statistical-based outlier detection?	4	CO4	L2
10	a	Define Information retrieval. What are basic measures for text retrieval?	5	CO5	L2
	b	Discuss about mining time-series and sequence data.	5	CO5	L2
		OR			
11	a	Explain in detail about Spatial Data Mining.	5	CO5	L2
	b	Briefly discuss about mining the World Wide Web.	5	CO5	L2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code:20EC612OE	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B.Tech.VI Semester Supply End Examinations, January-2024

Fundamentals of IOT

Common to CSE,IT&CSM

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	List the Applications of IoT.	2	CO1	1
	b	List the "things" in IoT and explain briefly.	2	CO1	2
	c	Define M2M.	2	CO2	1
	d	Give some examples of communication protocols used in IoT and M2M.	2	CO2	2
	e	List Raspberry Pi interfaces.	2	CO3	1
	f	Explain the Serial Raspberry Pi interface in detail.	2	CO3	2
	g	Differentiate Raspberry with Arduino.	2	CO4	2
	h	What does SDN stand for?	2	CO4	1
	i	List out the characteristics of cloud computing?	2	CO5	1
	j	Explain about a Smart Parking System	2	CO5	2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Design the protocol layer of IoT and explain various protocols used in each layer.	5	CO1	6
	b	List and explain the characteristics of IoT.	5	CO1	2
		OR			
3	a	Give a brief note on IoT Communication Models.	5	CO1	4
	b	Summarise the various IoT Enabled technologies.	5	CO1	2
4	a	Explain Modified OSI Stack for the IoT/M2M Systems	5	CO2	5
	b	Explain the following with respect to Arduino Programming (i) Structure (ii) Function	5	CO2	3

Subject Code:20EC612OE	SET-II	HT NO:			7	R					

		OR			
5	a	Examine the process of using the Integrated Development Environment (IDE) to prepare an Arduino sketch.	5	CO2	3
	b	Analyze the purpose of Sensors, Actuators and Smart Objects.	5	CO2	4
6	a	Describe the relative strengths and limitations of Building IOT with Raspberry Pi.	5	CO3	4
	b	List the essential requirements for setting up Raspberry Pi.	5	CO3	1
		OR			
7	a	Write in detail the Steps to interface Raspberry Pi with sensors.	5	CO3	3
	b	Examine and Conclude on controlling LED with Raspberry Pi.	5	CO3	4
8	a	Explain key elements of SDN & SDN for IoT	5	CO4	5
	b	Explain in detail the need and types of Data Analytics for IoT and brief the challenges faced by IoT Data Analytics.	5	CO4	2
		OR			
9	a	Describe the relative strength and limitation of Building IOT with RASPERRY PI	5	CO4	4
	b	Explain the functions of Data Analytics	5	CO4	2
10	a	What are the different smart technologies used for the development of IoT applications.	5	CO5	1
	b	Formulate the significant use of Raspberry Pi in Smart cities and Industrial appliances.	5	CO5	6
		OR			
11		Prepare an IoT strategy for smart city and design the layered architecture for implementing smart cities.	10	CO5	6

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Subject Code: 20CS525PE	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. V Semester Regular End Examinations, January-2024

Natural language Processing(PE-II)

Common to AIML, CSG, CSM&CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Explain the methods used in finding the structure of documents.	2 M	CO1	L2
	b	Discuss the challenges associated with morphological analysis.	2 M	CO1	L2
	c	Discuss the importance of parsing algorithms in syntactic analysis.	2 M	CO2	L2
	d	Discuss models for ambiguity resolution in parsing	2 M	CO2	L2
	e	How does semantic interpretation contribute to understanding the meaning of language expressions?	2 M	CO3	L3
	f	Explain the concept of word sense systems and their role in semantic parsing.	2 M	CO3	L2
	g	Discuss the role of software in implementing and facilitating predicate-argument structure analysis.	2 M	CO4	L2
	h	Explain the concept of predicate-argument structure.	2 M	CO4	L2
	i	How do cohesive elements contribute to the overall structure of discourse?	2 M	CO5	L3
	j	Discuss the importance of N-Gram models in language modeling and provide examples to illustrate their application.	2 M	CO5	L2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Discuss the structure and components of words.	5 M	CO1	L2
	b	Discuss the Complexity of the approaches in NLP.	5 M	CO1	L2
		OR			
3		Briefly explain morphological models for finding the	10 M	CO1	L2

structure of documents.

4	a	Give an overview of various approach for syntactic representation.	5 M	CO2	L2
	b	What are the issues in multilingual syntactic analysis?	5 M	CO2	L3
		OR			
5	a	Given Grammar S→ AB | BB A→ CC | AB | a B→ BB | CA | b C→ BA | AA | b Word w= aabb. Apply Top Down Parsing test, the word can be generated or not.	5 M	CO2	L4
	b	Explain Tree Banks and its role in parsing.	5 M	CO2	L2
6	a	Explain Morphological structure.		CO3	L2
	b	What kind of softwares are available for semantics in NLP.	5 M	CO3	L3
		OR			
7		Illustrate the methods for resolving entity and event in natural language.	10 M	CO3	L2
8		Briefly explain predicate-argument structure with an example.	10 M	CO4	L2
		OR			
9		Explain meaning representation systems in NLP.	10 M	CO4	L2
10		Explain about N-Gram models with suitable examples.	10 M	CO5	L2
		OR			
11	a	How Parameter Estimation supports Language Modelling?	5 M	CO5	L3
	b	Differentiate Multilingual and Cross lingual Language Models.	5 M	CO5	L4

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

*****

Subject Code: 20CS512PE	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. V Semester Regular & Supply End Examinations, January-2024

Objected Oriented Analysis & design

Common to AIML,CSE & IT&CSM

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Write the significance of model building.	2 marks	CO1	L1
	b	List the four basic principles of modeling.	2 marks	CO1	L2
	c	What are the steps to model simple collaborations of class diagram?	2 marks	CO2	L3
	d	Define UML Diagram and list any four diagrams in the UML.	2 marks	CO2	L1
	e	What are the Purposes of Interaction Diagram?	2 marks	CO3	L2
	f	Define Scenario, Actors and different types of actors.	2 marks	CO3	L1
	g	Write the different parts of a state in a state diagram.	2 marks	CO4	L3
	h	What are States, transitions, and activities?	2 marks	CO4	L4
	i	Draw the interaction diagram for login usecase in library Application.	2 marks	CO5	L5
	j	Enumerate the steps to model architectural patterns.	2 marks	CO5	L6

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Write the procedure to model an object structure.	5 marks	CO1	L1
	b	Explain model? What are the aims of modeling?	5 marks	CO1	L5
		OR			
3	a	Explain briefly the classification of things with UML Notation.	5 marks	CO1	L4
	b	Illustrate the conceptual model of UML in detail.	5 marks	CO1	L6
4	a	Define relationship. Explain the four adornments that apply to an Association	5 marks	CO2	L1

Subject Code: 20CS512PE	SET-II	HT NO:			7	R					

	b	Explain forward and reverse engineering in case of class Diagrams.	5 marks	CO2	L4
		OR			
5	a	What are the five constraints applied to association relationships. Explain briefly.	5 marks	CO2	L2
	b	Explain about generalization with an example.	5 marks	CO2	L4
6	a	Enumerate the steps to model flows of control by time Ordering.	5 marks	CO3	L6
	b	Design a use case diagram to model the behavior of a cellular phone. Explain briefly.	5 marks	CO3	L1
		OR			
7	a	Describe interaction diagrams. What are their contents and common properties.	5 marks	CO3	L3
	b	Demonstrate the various adornments to ends of links denoted as standard stereotypes? Explain about objects and roles.	5 marks	CO3	L6
8	a	What is meant by state machine? Discuss about sequential sub states and history states with an example.	5 marks	CO4	L2
	b	Define component. Contrast differences between components and classes? How are component and interface related?	5 marks	CO4	L1
		OR			
9	a	Explain the forward engineering and reverse engineering in case of component diagrams.	5 marks	CO4	L4
	b	Design a UML diagram which models IPC in a distributed reservation system with processes spread across four nodes. Briefly explain.	5 marks	CO4	L5
10	a	Design class diagram for library Application,	5 marks	CO5	L2
	b	Enumerate the steps to model design patterns.	5 marks	CO5	L6
		OR			
11	a	Design deployment diagram for library Application.	5 marks	CO5	L1
	b	Distinguish between patterns and frameworks.	5 marks	CO5	L4

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code: 20CS603PC	SET-I	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. VI Semester Supply End Examinations, January-2024

Software Engineering

Common to CSM&CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Define software engineering	2	CO1	L1
	b	What are the merits of incremental model	2	CO1	L1
	c	What is feasibility study	2	CO2	L1
	d	Differentiate between user requirement and system requirement	2	CO2	L4
	e	List the guidelines for data design.	2	CO3	L1
	f	Define software architecture	2	CO3	L1
	g	What is testing	2	CO4	L1
	h	Write a short note on black box testing.	2	CO4	L1
	i	What is software reliability and how this parameter helps in managing software quality	2	CO5	L1
	j	Give the different categories of risks.	2	CO5	L1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Write detailed notes on CMMI.	5	CO1	L1
	b	Describe the various software myths.	5	CO1	L6
		OR			
3	a	Explain the following: i) Water fall model ii) Spiral Model.	5	CO1	L2
	b	What are the challenges of software engineering	5	CO1	L1
4	a	Explain the importance of software specification of requirements.	5	CO2	L2
	b	Describe five desirable characteristics of a good software requirement specification document.	5	CO2	L2
		OR			
5	a	Draw a context level model for a web-based food- ordering system	5	CO2	L3

		such as "Swiggy".			
	b	Give an overview of behavioral system models	5	CO2	L1
6	a	What is Software architecture? Analyse various architectural styles and patterns	5	CO3	L4
	b	Briefly explain Use case diagram	5	CO3	L2
		OR			
7	a	Write a short note on class diagrams.	5	CO3	L1
	b	How system modeling is achieved using UML? Explain with a suitable example	5	CO3	L2
8	a	Write a short note on system testing.	5	CO4	L1
	b	Explain about the art of Debugging	5	CO4	L2
		OR			
9	a	Explain about the metrics for software quality.	5	CO4	L2
	b	What is software maintenance? How to control maintenance cost.	5	CO4	L1
10	a	Distinguish between Reactive Vs Proactive risk strategies.	5	CO5	L4
	b	Explain the methods for Risk Identification.	5	CO5	L2
		OR			
11	a	Explain about the software quality assurance and reliability	5	CO5	L2
	b	Describe the role of software reviews in achieving good quality software	5	CO5	L2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding** **L 3 : Applying** **L 4 : Analysing** **L 5 : Evaluating** **L 6 : Creating**

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Subject Code: 20CS635PE	SET-I	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. VI Semester Supply End Examinations, January-2024

Software Testing & Methodologies

Common to CSE, IT, CSM&CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	What is testing?	2	CO1	1
	b	Contrast the modularity and efficiency?	2	CO1	2
	c	What is meant by transaction and give an example.	2	CO2	1
	d	Give an example for transaction flow.	2	CO2	1
	e	What is meant by path? Give example of it.	2	CO3	1
	f	Give an example for Structured flow graph Transformations	2	CO3	1
	g	What is state? Give an example.	2	CO4	1
	h	Give an example for State Table	2	CO4	1
	i	What is meant by Tool Building	2	CO5	1
	j	What is meant by Graph matrix	2	CO5	1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Compare Testing and Debugging	5	CO1	2
	b	Describe the phases in the testers mental life	5	CO1	1
		OR			
3	a	Interpret the flow graph elements by using symbols.	5	CO1	2
	b	Describe the concept of path testing	5	CO1	2
4	a	Design the forgiving data flow anomaly state graph.	5	CO2	6
	b	Elaborate the strategies in data flow testing.	5	CO2	6
		OR			
5	a	Interpret the Nice and Ugly domains	5	CO2	2
	b	Demonstrate the testing of two-dimensional domains	5	CO2	2

Subject Code: 20CS635PE	SET-I	HT NO:			7	R					

6	a	Infer the Maximum Path Count Arithmetic with an example	5	CO3	2
	b	Exemplify the Reduction procedure algorithm with an example.	5	CO3	2
		OR			
7	a	Write a short note on Regular expressions and Flow anomaly detection.	5	CO3	1
	b	Illustrate the Kv charts for the function of two variables	5	CO3	2
8	a	Outline the State Graphs	5	CO4	2
	b	Discuss the i)Equivalent states ii) Transition bugs	5	CO4	6
		OR			
9	a	Analyse the principles of state testing	5	CO4	4
	b	Assess the Limitations and Extensions of State testing	5	CO4	5
10	a	Identify the Problems with Pictorial Graphs, Give brief view on those.	5	CO5	2
	b	Inference the matrix of a graph along with example	5	CO5	2
		OR			
11	a	Infer the i)Symmetric relations ii) Asymmetric relations	5	CO5	2
	b	Outline the i)Equivalence relation ii)Partial ordering relation	5	CO5	2

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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Subject Code: 20CS503PC	SET-II	HT NO:			7	R					

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. V Semester Regular & SupplyEnd Examinations, January-2024

Web Technologies

Common to AIML, CSG, CSE, IT, CSM & CSD

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	How do you declare variables in PHP. Give an example	2	CO1	L1
	b	List the file operations that can be performed in PHP	2	CO1	L1
	c	What is a HTML Frame? Give an example	2	CO2	L1
	d	What is a form in HTML?	2	CO2	L1
	e	Write the purpose of Cookies in web page.	2	CO3	L1
	f	What is servlet API?	2	CO3	L1
	g	How JSP Page is Compiled?	2	CO4	L1
	h	List the advantages of Java Beans.	2	CO4	L1
	i	What is the scope of variables in Java Script?	2	CO5	L1
	j	How the keyword "new" is used to create objects in Java Script?	2	CO5	L1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Summarize about various functions used in PHP with examples.	5	CO1	L2
	b	Illustrate a PHP code to create a login page for a web application	5	CO1	L2
		OR			
3	a	Explain the concept of Handling sessions in PHP	5	CO1	L2
	b	Show a program in PHP to find out the length of a string	5	CO1	L2
4	a	Explain about XML Tags with example.	5	CO2	L2
	b	Show how an XML Schema can be created	5	CO2	L2
		OR			
5	a	Identify the advantages of XML Schemas over DTD's	5	CO2	L3

Subject Code: 20CS503PC	SET-II	HT NO:			7	R					

	b	Distinguish about DOM and SAX Parsers in Java	5	CO2	L4
6	a	Explain the Life cycle of a Servlet with a neat sketch	5	CO3	L4
	b	What is Servlet API? How Servlet Parameters are read?	5	CO3	L4
		OR			
7	a	Compare about HTTP Request and Responses? Explain	5	CO3	L4
	b	Analyze the concept of connection to database using JDBC	5	CO3	L4
8	a	Explain the importance of JSP Code snippets? Develop a JSP program to display current date and time.	7	CO4	L5
	b	Discuss any three implicit objects in JSP?	3	CO4	L6
		OR			
9	a	Classify with suitable examples, difference between get and post in servlets.	5	CO4	L4
	b	Examine the concept of session tracking with an example	5	CO4	L4
10	a	Explain using a JavaScript to display whether given number prime or not.	5	CO5	L5
	b	Explain how to create a function using function over loading?	5	CO5	L5
		OR			
11	a	Design the concept how to create a Date object using JavaScript?	5	CO5	L6
	b	Discuss about the concept of event Handlers	5	CO5	L6

CO : Course Outcomes

BL : Bloom's Taxonomy Levels **L 1 : Remembering** **L 2 : Understanding** **L 3 : Applying** **L 4 : Analysing** **L 5 : Evaluating** **L 6 : Creating**

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