MASTER OF COMPUTER APPLICATION

(5 Years Integrated)

ASSIGNMENTS

MCA 5th Year



(SESSON 2023-2024)

Centre for Distance and Online Education Guru Jambheshwar University ofScience & Technology Hisar - 125001

Programme: MCA 5 year int. Course	Year 5 th	
Course: Principles of Programming Language	Code: MCA-501	
	Total Marks=30	

Important Instructions:

- i. Attempt all questions from each assignment given below.
- ii. Each assignment carries 15 marks.
- iii. All questions are to be attempted in legible handwriting on plane white A-4 size paper.

ASSIGNMENT-I

Q1. Describe the principle of programming language? Explain its objectives o	f
programming language.	(5)
Q2. Explain Object oriented programming? What are its key concepts?	(5)
Q3. Give an ambiguous and unambiguous grammar for the language defined as ' strings of any length generated over $\{0, 1\}^*$.	(5)
ASSIGNMENT-II	
Q1. Explain the implementation of direct-access files	(5)

- Q2. Define Classes and Polymorphism. (5)
- Q3. Explain the static and dynamic scope of an identifier with their rules. (5)

Programme: MCA Course: Advanced Architecture and Parallel Processing

Year: 5th, Code: MCA-502

Total Marks=30

Important Instructions:

- I. Attempt all questions given below.
- II. Each assignment carries 15 marks.
- III. All questions are to be attempted in legible handwriting on plane white A-4 size paper.

ASSIGNMENT-I

- Q.1. Explain any four static connection networks and ant three dynamic connection networks.
- Q.2. Describe different program flow mechanisms and compare them.
- Q.3. Compare superscalar and vector processor.

ASSIGNMENT-II

- Q.1. Describe cache memory organization using different types of mapping.
- Q.2. Explain the working of an asynchronous and synchronous pipeline processor.
- Q.3. Explain the term collision free scheduling with reference to non-linear pipelines.

Program Year: 5 th	me: MCA -5 Year	Course: Object Oriented Design and Modelling Code: MCA-503 Total Marks=30
Importan	nt Instructions:	
- i.	Attempt all questions from ea	ch assignment given below.
ii.	Each assignment carries 15 m	arks.
iii.	All questions are to be attem	pted in legible handwriting on plane white A-4
	size paper.	
	Ass	ignment – 1
Q-1: How langu	object-based programming language lages?	es are different from object-oriented programming
		(5 marks)
0.2. W.	a darum tha mariana atawa immalmad in	abient emiented design
Q-2: write	e down the various steps involved in	object oriented design.
		(5 marks)
Q-3: Write	e a short note on Meta Data.	
		(5 marks)
		(5 marks)
	Assi	gnment– 11
Q-1: Expl	lain any one architectural framewor	k.
		(5 marks)
		(5 marks)
Q-2: Writ	e down about the specification of c	lass dependencies.
		(5 marks)
O 2. What	t are avants and states?	
Q-5: what	t are events and states?	
		(5 marks)

Programme: MCA 5 year int. CourseCourse: System Simulation and ModelingYear 5thCode: MCA-504Total Marks=30

Important Instructions

- i. Attempt all questions from each assignment given below.
- ii. Each assignment carries 15 marks.
- iii. All questions are to be attempted in legible handwriting on plane white A-4 size paper.

ASSIGNMENT-I

Q1.	What are model? What do you mean by modelling process?	(5)
Q2.	Differentiate between differential and partial differential equation model? Also compare model data with real system data?	(5)
Q3.	Write a short note on: Combining discrete event.	(5)

ASSIGNMENT-II

Q1.	Differentiate between	Verification and	validation	modeling procedures	? (5)
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- Q2. What do you mean by simulation process? Explain concept of simulation of a time sharing computer system? (5)
- Q3. What are simulation languages? Explain any language in detail? (5)

Programme: Master in Computer Application Warehousing Year: 5th Code: MCA-505 Course: Data Mining and Data Total marks=30

6

Important Instructions

- i. Attempt all questions from each assignment given below.
- ii. Each assignment carries 15 marks.
- iii. All questions are to be attempted in legible handwriting on plane white A-4 size paper.

ASSIGNMENT (PART-I)

I The following table consists of training data from an employee database. The data have been generalized. For example, "31: :: 35" for *age* represents the age range of 31 to 35. For a given row entry, *count* represents the number of data tuples having the values for *department, status, age*, and *salary* given in that row.

department	status	age	salary	count
sales	senior	31: : :35	46K: : :50K	30
sales	junior	26: : :30	26K: : :30K	40
sales	junior	31: : :35	31K: : :35K	40
systems	junior	21:::25	46K: : :50K	20
systems	senior	31: : :35	66K: : :70K	5
systems	junior	26: : :30	46K: : :50K	3
systems	senior	41: : :45	66K: : :70K	3
marketing	senior	36: : :40	46K: : :50K	10
marketing	junior	31: : :35	41K: : :45K	4
secretary	senior	46: : :50	36K: : :40K	4
secretary	junior	26: : :30	26K: : :30K	6

Let status be the class label attribute.

Given a data tuple having the values "*systems*," "26... 30," and "46–50K" for the attributes *department*, *age*, and *salary*, respectively, what would a naive Bayesian classification of the *status* for the tuple be?

- II Why separation is required between an operational database and a data warehouse system? 4
- III What is correlation analysis? How it is needed in data integration for handling redundancies? 5

ASSIGNMENT (PART-II)

I The following table consists of training data from an employee database. The data have been generalized. For example, "31 : : : 35" for *age* represents the age range of 31 to 35. For a given row entry, *count* represents the number of data tuples having the values for *department, status, age*, and *salary* given in that row.

department status age salary count

sales	senior	31: : :35	46K: : :50K	30
sales	junior	26: : :30	26K: : :30K	40
sales	junior	31: : :35	31K: : :35K	40
systems	junior	21:::25	46K: : :50K	20
systems	senior	31: : :35	66K: : :70K	5
systems	junior	26: : :30	46K: : :50K	3
systems	senior	41:::45	66K: : :70K	3
marketing	senior	36: : :40	46K: : :50K	10
marketing	junior	31: : :35	41K: : :45K	4
secretary	senior	46: : :50	36K: : :40K	4
secretary	junior	26: : :30	26K:::30K	6

Let status be the class label attribute

	Calculate information gain for age, salary and department. Also elaborate the steps of		
		5	
II	How a data cube models n-dimensional data? What is a lattice of cuboids?	5	
III	How Principal Component analysis reduces the dimensions for a data set?	5	