Enrolment No.	

PCET's Pimpri Chinchwad University
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Pimpri Chinchwad University

Established under Govt. of Maharashtra Act No. V of 2023
Sate, Maval (PMRDA) Dist - Pune, Maharashtra - 412 106.

End-Semester Assessment – Nov/Dec- 2024

Program: MCA | Semester: I

Maximum Marks: 60 marks | Time: 2.5 hrs.

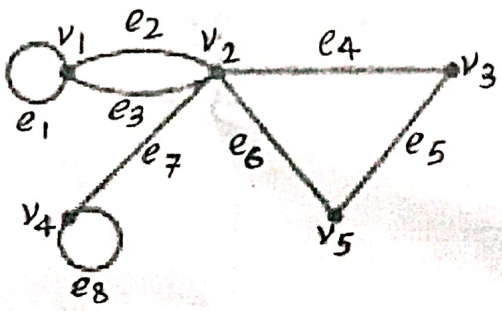
Course Name: Probability And Combinatory **Course Code : PMC106/BSC**

Course Outcomes (CO):

1. To compare head graph theory and several concepts and related to it. It enable to use the concept of tree to find solution of several problems related to computer applications.
2. To identify of set theory and partially ordered sets to expand mathematical maturity.
3. To apply the rule for appropriate principles for counting techniques to understand partials examples and interpret the associated operations and terminologies in context.
4. To formulate problems precisely, solve the problems.6
5. To develop students understanding of formal proof technique and explain the reasoning clearly by using the probabilities and statistics method.

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CO	BL	Marks
Q.1) Solve any two:			
a) Explain the trees and rooted tree, binary tree and complete binary tree with an appropriate examples	**CO1**	**2**	**5 Marks**
b) Apply the rule of incidence and find matrix of incidence for the given graph 	**CO1**	**3**	**5 Marks**
c) Define graph and the types of graph with example?	**CO1**	**3**	**5 Marks**
Q.2) Solve any two:			
a) Explain sets and any 5 types of sets with their example.	**CO2**	**2**	**5 Marks**

b) If A = {1, 3, 7, 9, 10}, B = {2, 5, 7, 8, 9, 10}, C = {0, 1, 3, 10}, D = {2, 4, 6, 8, 10}, E = {-1, -2, -3, 4, 8, 10} and F = {0} **Find:** (i) A ∪ B (ii) E ∪ D (iii) C ∪ F (iv) C ∪ D (v) B ∪ F (vi) A ∩ B (vii) C ∩ D (viii) E ∩ D (ix) C ∩ F (x) B ∩ F	**CO2**	**3**	**5 Marks**
c) There are 150 students in a party and there are three different brands P, Q and R of cold drink out of which 58 students drink P, 49 drink Q, 57 drink R, 14 drink P & R, 13 drink P & Q, 17 drink Q & R, 4 drink P & Q & R. How many students drink none?	**CO2**	**3**	**5 Marks**
Q.3) Solve any two:			
a) Find the number of permutations and combinations if n = 14 and r = 3.	**CO3**	**1**	**5 Marks**
b) Solve: i. ${}^{8}C_4$ ii. ${}^{10}C_7$	**CO3**	**2**	**5 Marks**
c) In how many different ways can the letters of the word **THOOUUGGGHTTSS** be arranged so that the vowels always come together?	**CO3**	**2**	**5 Marks**
Q.4) Solve the following:			
a) A deck of cards contains 52 cards. What is the probability of drawing a face card (Jack, Queen, or King)?	**CO4**	**2**	**5 marks**
b) A deck of cards contains 52 cards. What is the probability of drawing a red card?	**CO4**	**2**	**5 marks**
OR 			
c) Two coin are tossed 500 times, find the probability of each event to occur and we get: i. Two heads: 105 times ii. One head: 275 times iii. No heads: 120 times	**CO4**	**2**	**10 marks**
Q.5) Solve any two:			
a) One dice are thrown simultaneously. Find the probability of getting: i. The same number on both dice ii. An even number as the sum iii. A prime number as the sum	**CO5**	**2**	**10 marks**
b) From a pack of 52 cards, 4 are accidentally dropped. Find the chance that i. They will consist of a knave, a queen, a king and an ace ii. They are the 4 honors of the same suit iii. They may be one from each suit iv. Two of them are red and two are black	**CO5**	**2**	**10 marks**
c) Three coins are tossed what is the probability of getting i. all heads ii. Only 2 heads or 2 tell iii. At least 2 tell 1 head iv. All tell v. Only head or tell	**CO5**	**2**	**10 marks**

Enrolment No.	SCA24801030099

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End-Semester Assessment – Nov/Dec- 2024

Program: MCA | Semester: I

Maximum Marks: 60 marks | Time: 2.5 hrs.

Course Name: Object Oriented Software Engineering **Course Code:** PMC105B

Course Outcomes (CO):

1. To identify the differences between the structured paradigm and the object oriented paradigm in software development.
2. To explain the differences between the structured paradigm and the object oriented paradigm in software development.
3. To analyse knowledge of concepts, principles, state-of-the-art methods in software architecture and their relationships to other areas of software engineering specifically requirements, analysis and design, and implementation.
4. To analyse different testing methods with suitable case studies.
5. To be able to design, manage, and implement a computer based software system using the oops software engineering approach in a group setting.

Instructions:
- All questions are compulsory.
- Figures to be right indicate full marks.

Question	CO	BL	Marks
Q1) a) Differentiate between RAD and Spiral model.	CO1	BL1	5 Marks
b) Describe the agile and Extreme programming in brief.	CO1	BL1	5 Marks
Q.2) a) Draw the use case diagram for the Bank ATM system.	CO2	BL3	5 Marks
b) Draw Class diagram for online shopping system	CO2	BL3	5 Marks
Q.3) a) Explain the concepts of *coupling* and *cohesion* in software engineering.	CO3	BL2	5 Marks
b)Discuss the significance of software design as a critical process, supporting your answer with relevant observations.	CO3	BL2	5 Marks
Q.4) For an online reservation system , produce the different testing types required. OR	CO4	BL4	(10 marks)
Q.4) Explain the role of functional and non-functional testing in software quality assurance. Support your explanation with examples.	CO4	BL3	(10 marks)

Q.5) a) Explain the significance of software project scheduling in software engineering.	CO5	BL6	(10 marks)
b) Discuss the concept of DevOps in software development. Explain its core principles, practices, and benefits with suitable examples. OR	CO5	BL5	(10 marks)
Q.5) a) Discuss the key phases of software project management. Illustrate your answer with suitable examples..	CO5	BL5	(10 marks)
b) Explain the importance of Software Configuration Management (SCM) in software engineering.	CO5	BL5	(10 marks)

8/10 ✓ OR Traditional Contemporary theories on motivation

↳ Explain motivation theories can be applied to improve Individual Performance on the Workplace.

8 23. Intrensic & Extrensic on Cr. D.

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End-Semester Assessment – Nov/Dec- 2024

Program : Master In Computer Application
Semester: I
Maximum Marks: 60 marks
Time: 2.5 hrs.

Course Name: Data Structure And Algorithm **Course Code: PMC203**

Course Outcomes (CO):

1. To identify the concepts like array, matrix, traversing, and indexing using sorting and searching techniques.
2. To explain the appropriate data structures like stack, queue as applied to the specified problem definition.
3. To apply the concepts of Linked Lists and it's applications on given data
4. To implement the knowledge of handle operations like searching, insertion, deletion, and traversing mechanisms on various data structures
5. To evaluate the non-linear data structures through Tree.

Instructions:
- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CO	BL	Marks
Q1) a) **1.** How data structures are classified? Explain in detailed **2.** Describe the concept of linked list with the terminologies: node, next Pointer, null pointer and empty list.	**CO1**	**3**	**5 Marks**
b) Mention the features of ADT with example.	**CO1**	**3**	**5 Marks**
Q.2) a) Convert the following infix expression to its postfix form using stack A+B*(C-D)/(P-R)	**CO2**	**4**	**5 Marks**
b) Differentiate between stack And Queue	**CO2**	**4**	**5 Marks**
Q.3) a) Advantages and Disadvantages of Array over Linked List.	**CO3**	**5**	**5 Marks**
b)W. A. Function for create a linked list in sorted order	**CO3**	**5**	**5 Marks**
Q.4) W.A. menu driven program for the following operations for stack in linked list 1. Push() 2. Pop() 3. Display() 4. Exit()	**CO4**	**5**	**(10 marks)**

OR			
Q.4) a) Construct a binary search tree for following elements: **15, 25, 28, 30, 35, 40, 45, 50, 55, 60, 70** show each step of construction of BST b) Draw BST from Inorder and Preorder traversal Inorder: B E D A C H F G Preorder :- A B D E C F H G	**CO5**	**5**	**(10 marks)**
Q.5) Sort the following numbers in ascending order using Bubble sort. Given numbers: 9, 23, 5, 8, 1, 14, 56, 32, 1, 34 & write the output after each interaction. W. A function in c for Insertion sort. **OR**	**CO2**	**5**	**(20 marks)**
Q.5) *Implement a 'C' program to create a double Linked List* 1. Create Double Linked List 2. Display in reverse order 3. Delete first node of list 4. Count the nodes	**CO4**	**5**	**(20 marks)**

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End-Semester Assessment – Nov/Dec- 2024

Programme : MCA
Semester: I
Maximum Marks : 60 marks
Time: 2.5 hrs.

Course Name: Python Programming
Course Code: PMC101

Course Outcomes (CO):

1. To identify the basics of Python programming
2. To explain the control statements and functions with packages.
3. To comprehend the python programming strings and regular expressions
4. To apply knowledge of NumPy and plotting tools in Python.
5. To analyse data by using file handling operations.

Instructions:

- *All questions are compulsory.*
- *Figures to be right indicate full marks.*
- *For coding-based questions, use correct Python syntax and include comments to explain logic in code.*
- *Provide clear and concise answers with relevant examples wherever possible.*

Question		CO	BL	Marks
Q1)	a) Define the following terms with respect to Python programming: i) Script Model Programming ii) Python Variables	CO1	I	5 Marks
	b) Demonstrate the use of lists and tuples. Explain their differences.	CO1	II	5 Marks
Q2)	a) Explain the difference between if, elif, and else blocks in Python with examples.	CO2	II	5 Marks
	b) Apply the concept of modules by creating a Python module in one package, then importing and using it in another module.	CO2	III	5 Marks
Q3)	a) Write a Python program to format a string by embedding variables in it. Provide an example.	CO3	III	5 Marks
	b) Write a Python program to validate email address using regular expression.	CO3	III	5 Marks
Q4)	Write a Python program to demonstrate how to perform element-wise addition and multiplication on two NumPy arrays.	CO4	III	10 Marks
	OR			
Q4)	Write a Python program to generate a line plot using Matplotlib for a given dataset of x and y values. Add labels to the axes and a title to the plot.	CO4	III	10 Marks
Q5)	**Case Study:** Write a Python program to read a CSV file containing students details, filter students on the basis of marks scored above 75, save the filtered data into a new file.	CO5	IV	20 Marks
	OR			
Q5)	a) Analyse the differences between read(), readline(), and readlines() functions with suitable examples. b) WAP to add new text to an existing file and print its updated content.	CO5	IV	20 Marks

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End-Semester Assessment – Nov/Dec- 2024

Program : MCA

Semester: I

Maximum Marks: 60 marks

Time: 2.5 hrs.

Course Name: Organizational Behavior

Course Code: PMC108

Course Outcomes (CO):

1. To identify different levels of analysis in organizational behavior.
2. To apply the different factors that influence the organizational climate and cultures.
3. To understand the use of different concepts of organizational behavior to solve problems in organizations.
4. To analyze the different factors that contribute to organizational effectiveness.
5. To create a new organizational culture that is more supportive of employee engagement to evaluate the effectiveness of different organizational behavior interventions

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks.

Question	CO	BL	Marks
Q1) a) Define Organizational Behavior? Briefly explain the importance of organizational behavior in workplace dynamics? Explain different concepts of management.	CO1	I & II	5 Marks
b) What is an Effective management? Briefly explain any 5 critical Managerial Skills	CO1	I & II	5 Marks
Q.2) a) Explain the Attribution Theory in Organizational Behavior. Distinguish between Internal and external attribution? How does it influence employee perceptions and decision-making in the workplace?	CO2	I, II & IV	5 Marks
b) Explain with a neat diagram, Maslow's Hierarchy of Needs and its significance in understanding human motivation with suitable examples.	CO2	II & IV	5 Marks
Q.3) a) Explain the ABC Model of Attitude in Organizational Behavior. How can understanding this model help managers in improving employee motivation and job satisfaction?	CO3	I & II	5 Marks
b) Explain the concept of Classical Conditioning in Organizational Behavior. How can managers use this learning theory to shape employee behavior in the workplace?	CO3	I & II	5 Marks
Q.4) Discuss the various theories of motivation in Organizational Behavior. How can understanding these theories help managers improve employee performance and job satisfaction?	CO4	I & VI	10 Marks

OR			
Q.4) Explain about Tuckman's Model of stages of group development and analyze the key characteristics associated with each group.	CO4	II & IV	10 Marks
Q.5a) What is the role of organizational hierarchy in creating communication barriers? Discuss how rigid hierarchical structures and formal communication channels can hinder effective communication in an organization. How can organizations improve communication across different levels? **OR**	CO5	I & VI	10 Marks
Q.5a) What is interpersonal conflict? Briefly explain, how can these conflicts impact team dynamics, and what strategies can be employed to resolve them?	CO5	I & II	10 Marks
Q. 5b) what is organizational change? List down different types of Organizational Changes? Mention the common reasons for resistance to change in an organization? Discuss various strategies and approaches that managers can use to effectively manage and overcome resistance to change? **OR**	CO5	I & VI	10 Marks
Q5b) Explain the different styles of leadership in an organization. Discuss the advantages and disadvantages of each leadership style. Explain the leadership style which would be most effective in a rapidly changing technological environment.	CO5	II & VI	10 Marks

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