



**DPG STM, GURUGRAM**

**Sessional Exam**

**Course Name:** MCA

**Subject Name:** Object Oriented Programming Using  
JAVA

**Subject Code:** 20MCA21C1

**Semester:** 1st

**Session:** NOV-DEC

**Academic Year:** 2024

**Total marks:** 80

**Time Duration:**  
03:00 hrs.

- Note: 1. Question no. 1 is compulsory.  
2. Attempt any one question from each unit.  
3. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	Explain the following: a) Function of <i>this</i> keyword in java. b) What is an Array? Give example. c) Significance of final method ? d) Role of Class Loader in JVM.	II	CO2 CO2 CO1 CO1	16
<b>Unit-1 (Attempt any one question)</b>				
2	What is a constructor? Explain the role of default constructor in java. Also, write a program for constructor chaining.	I, II	CO2	16
3	Distinguish between procedural and object-oriented programming? Explain the difference between break and continue with the help of examples.	IV, II	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	What is an abstract class? What rules are to be followed to create a class and an abstract class? Explain with a suitable program.	II	CO2	16
5	How packages are important in java? What are the types of packages? Explain with example by taking two user defined package then import class from each package java file.	I,II	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	Write a program to print the factorial of a number by defining a method named 'Factorial'.	IV	CO3	16
7	Why multiple inheritance is not supported in java with the help of classes? Explain it with the help of a program.	II	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	Write a program to print the names of students by creating a Student class. If no name is passed while creating an object of Student class, then the name should be "Unknown", otherwise the name should be equal to the String value passed while creating object of Student class.	IV	CO2	16
9	What is an interface? What is its significance? Write a program to explain the relationship between class and an interface ?	II	CO3	16

		<b>DPG STM, GURUGRAM</b> (NAAC Accredited 'A' Grade College)		Semester: 1ST Session: NOV Academic Year:2024	
		<b><u>Sessional Exam</u></b>		Total marks:80	
		Course Name: MCA		Time Duration: 03:00 hrs.	
		Subject Name: COMPILER DESIGN			
		Subject Code:20MCA21C2			
<i>Note: 1. Question no. 1 is compulsory. 2. Attempt any one question from each unit. 3. Marks are indicated against the questions.</i>					
Q.N	Questions	Blooms Level	COs	Marks	
<b>Compulsory Question</b>					
1	What do you mean by system programming? Explain the components of system programming.	1	CO1	16	
2	What is code optimization? Illustrate with example.	1	CO2		
3	What do you understand by cross compiler?	1	CO3		
4	Draw syntax tree for the expression:ab-c+b-c	3	CO4		
<b>Unit-1 (Attempt any one question)</b>					
2	(a) Explain the problems faced by a one-pass assembler. Draw and explain the detailed flowchart for pass-2 of a two-pass assembler.  (b) What are different loading schemes? Explain absolute loader scheme with its advantages and disadvantages.	2  1	CO1	16	
3	(a) What are the basic functions of loaders? Differentiate absolute, relative and bootstrap loader.  (b) State the basic tasks a macro instruction processor performs. Explain how the nested macro calls are executed with example?	1  2	CO1	16	
<b>Unit-2 (Attempt any one question)</b>					
4	(a) Explain the main issues of code generation with example.  (b) Define peephole optimization. characteristics of peephole optimization. List the	2  1	CO2	16	
5	a) Explain DAG representation of basic blocks with example.  (b) Explain various code optimization techniques. Discuss the strategies for loop optimization and dead code elimination.	2  2	CO2	16	
<b>Unit-3 (Attempt any one question)</b>					
6	(a) Give the general structure of activation record. Explain the purpose of each component.  (b) What do you mean by attributed grammars? Discuss the translation scheme for converting an infix expression to its		CO3	16	

	equivalent postfix form.			
7	(a) Explain various data structure used for implementing symbol table and compare them.  (b) What are different intermediate code forms? Discuss different Three Address code types and implementations of Three Address statements.		CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	(a) Explain DAG representation of basic blocks with example.  (b) Discuss the following code optimization techniques with examples:  1. Constant propagation  2. Strength reduction  3. Code Motion		CO4	16
9	a) Explain the main issues of code generation with example.  (b) Define peephole optimization. characteristics of peephole optimization. List the		CO4	16

		<b>DPG STM, GURUGRAM</b> (NAAC Accredited 'A' Grade College)  <b><u>Sessional Exam</u></b> Course Name: MCA Subject Name: Visual Basics & Data Base Systems Subject Code: 20BCC11C3		<b>Semester: I</b> <b>Session: NOVEMBER</b> <b>Academic Year:2024</b>	
				<b>Total marks:80</b> <b>Time Duration:</b> 03:00 hrs.	
<i>Note: 1. Question no. 1 is compulsory. 4. Attempt any one question from each unit. 5. Marks are indicated against the questions.</i>					
<b>Q.N</b>	<b>Questions</b>	<b>Blooms Level</b>	<b>COs</b>	<b>Marks</b>	
<b>Compulsory Question</b>					
1	a) What are the various features of VB? b) Discuss One Dimensional and Multidimensional array in detail. c) What are the various database languages and their commands? d) Explain ACID properties.	Remembering	CO1 CO2 CO3 CO4	4 4 4 4	
<b>Unit-1 (Attempt any one</b>					

<b>question)</b>				
2	a) Differentiate between Picture Box and Image Box in terms of their respective properties and events. b) Explain the syntax and purpose of exit and continue statements used in loops.	Remembering	CO1	8 8
3	a) What do you mean by named constants? Also write down how to declare them with appropriate example. b) Explain the working of different components of Visual Basic IDE with an apt example.	Remembering	CO1	8 8
<b>Unit-2 (Attempt any one question)</b>				
4	a) How SDI is different from MDI? Explain how multiple forms can be added in VB. b) How a connection can be established using DAO? Illustrate with example.	Understanding	CO2	8 8
5	a) Differentiate between the load and Show events associated to VB forms. b) Write down the steps and code snippet in VB for setting a connection to a data source.	Creating	CO2	8 8
<b>Unit-3 (Attempt any one question)</b>				
6	a) Discuss three-schema architecture. Why mapping is needed among schema levels? How do different schema definition languages support this architecture? b) How tuple relational calculus is different from domain relational calculus? Discuss the expressive power of relational calculus in terms of its different types.	Understanding	CO3	8 8
7	a) Differentiate between conceptual and logical design. Write down the steps of Conceptual database design. b) How views are different from tables? How views can be created, deleted and updated? Explain with examples.	Understanding	CO3	8 8
<b>Unit-4 (Attempt any one question)</b>				
8	a) What is Schema refinement? How normalization plays a significant role in schema refinement? Illustrate with example. b) What is serializable schedule? Why is serializable schedule considered correct and how serializability is useful for concurrency control?	Understanding	CO4	8 8
9	a) What is decomposition? Why is it required? Discuss the properties of decomposition with example. b) What is deadlock? How deadlock can be detected and prevented? Explain.	Understanding	CO4	8 8



**DPG STM, GURUGRAM**  
(NAAC Accredited 'A' Grade College)

**Semester: I**  
**Session: NOVEMBER**  
**Academic Year:2024**

**Sessional Exam**  
**Course Name: MCA**  
**Subject Name: Computer Graphics And Multimedia**  
**Subject Code: 20MCA21C3**

**Total marks:80**  
**Time Duration: 03:00 hrs.**

*Note: 1. Question no. 1 is compulsory.  
6. Attempt any one question from each unit.  
7. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	a) Boundary Fill and Flood Fill b) 2D Shearing c) Parallel and Perspective Projection d) Multimedia	Remembering	CO1 CO2 CO3 CO4	4 4 4 4
<b>Unit-1 (Attempt any one question)</b>				
2	a) What are color CRT monitors? Which technique is used most and why? Illustrate. b) What do you mean by raster scan system? What are their characteristics? How are these systems different from random scan?	Remembering	CO1	8 8
3	Write the steps of Bresenham's line drawing algorithm. Indicate the raster locations that would be chosen by a line drawn from pixel coordinate (1,1) to pixel coordinate (8,5) using the same algorithm.	Remembering	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	Explain following:- a) Composite 2D transformation b) Bazier curves and surfaces	Understanding	CO2	8 8
5	Explain Cohen- Sutherland line clipping in detail. Also describe how to compute the intersection points of a line having starting point (X0,Y0) and ending point (Xn,Yn) with the left edge (at X=X1) and top edge (at Y=Y1) of the clipping window.	Creating	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	How a window is transformed on a viewport? Enumerate why homogenous coordinates are required. Write the homogenous coordinates of all the	Understanding	CO3	16

	basic 3D transformations.			
7	Compare Back-Face Detection and Depth-Buffer Method algorithms. How the hidden surface detection works in them? What is Illumination? Describe different Illumination methods.	Understanding	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	What are the components of multimedia? Explain its architecture.	Understanding	CO4	16
9	Enumerate the steps involved in authoring process. What are the compression and decompression data & file format standards?	Understanding	CO4	16

	<b>DPG STM, GURUGRAM</b> (NAAC Accredited 'A' Grade College) <b>Sessional Exam</b> <b>Course Name: MCA</b> <b>Subject Name: Digital Design and computer architecture</b> <b>Subject Code: 20MCA21C4</b>	<b>Semester: Ist</b> <b>Session: NOVEMBER</b> <b>Academic Year: 2024</b>
		<b>Total marks: 80</b> <b>Time Duration: 03:00 hrs.</b>

*Note: 1. Question no. 1 is compulsory.  
8. Attempt any one question from each unit.  
9. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	What do you mean by radix of the number system? mention different components of a number in a number system ? b) what is the importance of alphanumeric codes in digital processing ? c) write down the procedure to design a combinational circuit ? d) what important role does excitation table plays in designing the digital circuit? e) Differentiate between instruction code and operation code ? f) List down various applications of superscalar architecture ? g) why use of interface becomes mandatory while working with peripherals ? h) discuss how IOP can be used to improvise the efficiency of a computer ?	I	CO1 CO2 CO3 CO4	16 2 2 2 2
<b>Unit-1 (Attempt any one question)</b>				
2	Perform the following subtractions using 2's complement method : a) 0011.1001 – 0001.1110 b) 01100 – 00011 ii) Explain in detail the register configuration required for the floating point arithmetic operations ?	II	CO1	16

3	<p>What do you mean by the realization of a digital circuit ? realize the following logical expression by using only NAND gate : <math>AB' + A'B</math> ?</p> <p>ii) Define sop and pos simplification methods and simplify the following Boolean function in both SOP and POS format :  <math>f(a,b,c,d) = \Sigma(0,1,2,5,8,9,10)</math></p>	I	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	<p>Elaborate the working of parity generator comparator with the help of a labelled diagram ?</p> <p>ii) how edge triggered flip flops works differently from level triggered flip flops ?</p>	V	CO2	16
5	<p>Explain the working and importance of shift registers. Also discuss any two application of shift registers ?</p> <p>ii) what are the specific features of a binary counter ? explain how a binary counter works with a parallel load with an apt diagram ?</p>	II	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	<p>Demonstrate the concept of direct and indirect address with the help of appropriate example and diagram ?</p> <p>ii) explain the following in the context of RTL : selective clear , selective complement , mask and selective set .?</p>	II	CO3	16
7	<p>Define microprogram and micro instruction . discuss how computer instruction code is mapped into microinstruction code. ?</p> <p>ii) by using different performance evaluators compare the performance of scalar and pipeline architecture .?</p>	I	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	<p>Demonstrate how by using strobe and handshaking can be helpful in transferring data asynchronously ( take help of diagram ) ?</p> <p>ii) how interrupt initiated I/O is more efficient than programmed i/o ?</p>	I	CO4	16
9	<p>How pipeline architecture supports parallel processing ?explain the working and implementation of arithmetic pipeline to support your answer ?</p> <p>ii) detail out how serial communication is carried out while using character oriented protocol for transferring data in computer .?</p>	I	CO4	16

	<p><b>DPG STM, GURUGRAM</b>          (NAAC Accredited 'A' Grade College)</p> <p><b>Sessional Exam</b>  <b>Course Name: MCA</b>  <b>Subject Name: ADS USING C++/JAVA</b>  <b>Subject Code: 20MCA21C5</b></p>	<p><b>Semester: I</b>  <b>Session: NOVEMBER</b>  <b>Academic Year:2024</b></p>
		<p><b>Total marks:80</b>  <b>Time Duration: 03:00 hrs.</b></p>

<p><i>Note: 1. Question no. 1 is compulsory.</i></p> <p>10. <i>Attempt any one question from each unit.</i></p> <p>11. <i>Marks are indicated against the questions.</i></p>				
Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	a) What is Big-Oh notation? b) Explain pre order traversal of a binary tree? c) What do you mean by spanning tree? d) What is travelling salesman problem? e) Describe Euler graph? f) What is topological sort? g) Explain splay tree? h) Explain NP complete class problem?	Remembering	CO1 CO2 CO3 CO4	2 2 2 2 2 2 2 2
<b>Unit-1 (Attempt any one question)</b>				
2	c) What is recurrence tree method? How it is useful? Discuss its advantages with suitable examples. d) Explain best and worst case analysis of an algorithm?	Remembering	CO1	8 8
3	Explain following:-  a) Theta notation and asymptotic notation  b) Substitution method	Remembering	CO1	8 8
<b>Unit-2 (Attempt any one question)</b>				
4	a) What is binary search tree? How it is useful and used? Explain its applications and drawbacks? b) What is threaded binary tree? How is it useful and used? Explain its applications with examples.	Understanding	CO2	8 8
5	Explain AVL trees in detail. How many rotations are required during construction of an AVL tree if the following elements are added in the given order? 35, 50, 40, 25, 30, 60, 78, 20, 28	Creating	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	Explain Kruskal's algorithm and its advantages and applications with examples.	Understanding	CO3	16
7	Explain BFS and DFS using example, and their applications.	Understanding	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	What is 0/1 knapsack problem? How it is used? Explain its application and advantages with example.	Understanding	CO4	16
9	Explain following briefly:-  a) Backtracking algorithm and its uses and	Understanding	CO4	8

	advantages.			8
	b) KMP algorithm and its uses and applications.			

	<b>DPG STM, GURUGRAM</b> <b><u>Sessional Exam</u></b> <b>Course Name: MCA</b> <b>Subject Name: Computer Fundamentals and Programming in C</b> <b>Subject Code: 20BCC11C1</b>	<b>Semester: 1<sup>st</sup> sem</b> <b>Session: NOVEMBER</b> <b>Academic Year: 2023</b>		
		<b>Total marks: 80</b> <b>Time Duration: 03:00 hrs.</b>		

*Note: 1. Question no. 1 is compulsory.  
2. Attempt any one question from each unit.  
3. Marks are indicated against the questions.*

Q. N	Questions	Bloom's Level	COs	Marks
<b>Compulsory Question</b>				
1	Write a short note on the following : a) Operating system b) Use of PowerPoint c) Flowcharts d) File handling	II	CO1 CO2 CO3 CO4	4*4=16
<b>Unit-1 (Attempt any one question)</b>				
2	Define computer. Explain its block diagram. Discuss the advantages and limitations of the computer.	II	CO1	16
3	a) Elaborate different types of network topologies. b) Discuss the various services of Internet.	VI	CO1	8*2=16
<b>Unit-2 (Attempt any one question)</b>				
4	Discuss the following features of MS-Word : a) Mail Merge b) Macros	VI	CO2	8*2=16
5	a) How to use formulas in MS-Excel ? b) How to insert animation in the power point presentation ?	III	CO2	8*2=16
<b>Unit-3 (Attempt any one question)</b>				
6	Explain the following : a) Structure of C program b) Operators in C c) If-else statement d) Do-while loop	III	CO3	4*4=16
7	Define array. Explain how array is declared and initialized with example.	V	CO3	16

Unit-4 (Attempt any one question)				
8	a) Explain the concept of pointers. b) Write a C program to find factorial of a number using recursion.	V	CO4	8*2=16
9	Differentiate between structure and union with suitable example.	IV	CO4	16

	<p align="center"><b>DPG STM, GURUGRAM</b></p> <p align="center"><b><u>Sessional Exam</u></b></p> <p><b>Course Name: MCA ( Bridge Course)</b></p> <p><b>Subject Name: C++ and Data structure</b></p> <p><b>Subject Code: 20BCC11C2</b></p>	<p align="center"><b>Semester: 1st</b></p> <p align="center"><b>Session: NOVEMBER</b></p> <p align="center"><b>Academic Year: 2024</b></p>
		<p align="center"><b>Total marks: 80</b></p> <p align="center"><b>Time Duration: 03:00 hrs.</b></p>

*Note: 1. Question no. 1 is compulsory.  
2. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	A. What are the features of c++? B. What is overloading. C. Difference between linked list and double linked list. D. Define application of stack.	2 1 1 1 1	1 1 2 2 2	16
<b>(Unit-1)</b>				
2	Differentiate between procedure language and object oriented language.	2	1	8
3	What are the Constructor and destructor in C++? What are the advantage using constructors? Explain in detail.	1	1	8
<b>(Unit-2)</b>				
4.	What is inheritance? Explain the types and need of inheritance with example.	1	2	8
5	Explain the following with example: a. Exception handling in C++. b. Differentiate between overloading and overriding.	1	2	8
<b>(Unit-3)</b>				
6	What is algorithm. Define Top down and bottom up approach to algorithm design.	2	3	8
7	Define array as data structure and it's operations.  Or  Define with example: a. Merge sort . b. Selection sort	2	3	8
<b>(Unit-4)</b>				

8	<b>Define stack. Explain different operation on stacks in detail.</b> <b>Or</b> What is queue? Discuss it's various applications	1,2	4	8
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9	What is linked list? Write an algorithm to delete a specific element from single linked list? Or Explain double linked list and circular linked list with example.	1,2	4	8

	<b>DPG STM, GURUGRAM</b> <b>(NAAC Accredited 'A' Grade College)</b> <b>Sessional Exam</b> <b>Course Name: MCA (2 YEAR PROGRAMME)</b> <b>Subject Name: DATA MINING AND BIG DATA ANALYTICS</b> <b>Subject Code:21MCA23C1</b>	<b>Semester: 3rd</b> <b>Session: NOVEMBER</b> <b>Academic Year: 2024</b>
		<b>Total marks: 80</b> <b>Time Duration: 03:00 hrs.</b>

*Note: 1. Question no. 1 is compulsory.  
2. Attempt any one question from each unit.  
3. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
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**Compulsory Question**

1	(a) How a method can be designed that mines the complete set of frequent item sets without candidate generation? (b) How the quality of cluster can be accessed? (c) What is Hive in Big Data? (d) Compare big data analytics with traditional data analytics.	I I I II	CO1 CO2 CO3 CO4	16
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**Unit-1 (Attempt any one question)**

2	(a) Define association rule performance measures. What do you mean by 'confidence' and "support' in association rule mining. Considering the following example, find the 'support of frequent item sets {A}, {B}, {C}, {A, C},	I	CO1	16										
<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Transaction ID</th> <th>Item Bought</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>A,B,C</td> </tr> <tr> <td>1000</td> <td>A,C</td> </tr> <tr> <td>4000</td> <td>A,D</td> </tr> <tr> <td>5000</td> <td>B,E,F</td> </tr> </tbody> </table>		Transaction ID	Item Bought	2000	A,B,C	1000	A,C	4000	A,D	5000	B,E,F			
Transaction ID	Item Bought													
2000	A,B,C													
1000	A,C													
4000	A,D													
5000	B,E,F													
	(b) What is data discretization? What are its different categories? How entropy is considered as measure of discretization?													

3	Discuss frequent pattern analysis with its advantages and disadvantages. Explain frequent pattern analysis for market basket analysis or any other application using Apriori algorithm with suitable small dataset.	II	CO1	16
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**Unit-2 (Attempt any one question)**

4	Define Bayesian classification. Discuss the classification using back-propagation algorithm and SVM. Also explain a suitable technique to improve classification accuracy.	I,V	CO2	16
5	Discuss the applications of WEKA tools in data mining. Illustrate, how clustering can be performed for a dataset in data mining. Explain with the help of any two popular clustering algorithms.	II	CO2	16

**Unit-3 (Attempt any one question)**

6	(a) Draw and explain HDFS architecture. Discuss the functions of Name Node and Data Node. What is Name Node? (b) Explain the modes of operations in Hadoop.	II	CO3	16
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7	(a) What do you mean by Big Data with its challenges and applications? (b) Explain Hadoop architecture and its components with proper diagram.	I	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	(a) What is R and why is it commonly used for data analytics? (b) Differentiate between R and Big R .	I	CO4	16
9	(a) What is Hadoop Ecosystem? Discuss various components of Hadoop ecosystem. (b) What is Hive in big data? Explain its architecture and summarize its features.	I	CO4	16

<b>DPG STM, GURUGRAM</b> (NAAC Accredited 'A' Grade College) <b>Sessional Exam</b> Course Name: MCA Subject Name: Artificial Intelligence & Computational Intelligence Subject Code:21MCA23C2		Semester: 3RD Session: NOVEMBER Academic Year:2024		
		Total marks:80 Time Duration: 03:00 hrs.		

*Note: 1. Question no. 1 is compulsory.*

*12. Attempt any one question from each unit.*

*13. Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	What is Production System? Name its Components.	II	CO1	16
2	What is admissibility of an algorithm?	I	CO2	
3	Discuss the role of certainty factor in knowledge representation.	V	CO4	
4	How Harmony Optimization Technique works?	I	CO3	
<b>Unit-1 (Attempt any one question)</b>				
2	Differentiate between Blind search and Heuristic search. When does blind search better than heuristic search? Also explain AO* heuristic search algorithm.	V	CO1	16
3	Why it is important that an expert system be able to explain the why and how questions related to problem solving? Discuss the role of inference engine in an expert system.	V	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	Identify and explain different types of knowledge in AI. Describe key representation schemes.	III	CO2	16
5	What is Knowledge engineering? Discuss the level of knowledge representation in artificial intelligence.	I	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	What is the difference between biological and artificial neurons? What is the role of back propagation network in ANN? Discuss with an example.	I,V	CO3	16
7	What are the fundamental principles of evolutionary computation? Define and explain PSO and ACO.	IV	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	What is fuzzy set? What is the membership function of a fuzzy set? Can a fuzzy membership be TRUE or FALSE at the same time? Illustrate with an example.	IV	CO4	16
9	What is a fuzzy inference system? Discuss applications in pattern recognition, robotics, and natural language processing.	I,V	CO4	16

		<b>DPG STM, GURUGRAM</b> <u>Sessional Exam</u> <b>Course Name: MCA</b> <b>Subject Name: Android Mobile Application Development</b> <b>Subject Code: 21MCA23C3</b>		<b>Semester: 3<sup>rd</sup> sem</b> <b>Session: NOVEMBER</b> <b>Academic Year: 2024</b>	
				<b>Total marks: 80</b> <b>Time Duration:</b> 03:00 hrs.	
<p><i>Note: 1. Question no. 1 is compulsory.</i>  <i>2. Attempt any one question from each unit.</i>  <i>3. Marks are indicated against the questions.</i></p>					
Q.N	Questions	Blooms Level	COs	Marks	
<b>Compulsory Question</b>					
1	Discuss the following: a) Plug-in b) MVC architecture pattern c) Fragment d) Features of Android	VI	CO1 CO2 CO3 CO4	4*4=16	
<b>Unit-1 (Attempt any one question)</b>					
2	a) What do you mean by Mobile Application? What are the characteristics of mobile application? Explain the different types of mobile applications? b) What is mobile development framework? Explain any four mobile development frameworks in detail.	II	CO1	2*8=16	
3	a) Discuss the following: i) Mobile Device Profile ii) Dynamic Linking b) How is memory management done in android application? Explain in detail.	VI	CO1	2*8=16	
<b>Unit-2 (Attempt any one question)</b>					
4	Discuss the various components of android application. Explain the activity and intent components in detail.	VI	CO2	16	
5	a) Explain the architecture of android application. b) Explain how to implement location based services in android application.	V	CO2	2*8=16	
<b>Unit-3 (Attempt any one question)</b>					
6	What are the different steps in developing the android application? Explain how the android application is packaged and deployed.	IV	CO3	16	
7	What is Google Maps Activity? How it works with Map View and Map Activity? Explain with example.	IV	CO3	16	
<b>Unit-4 (Attempt any one question)</b>					
8	Elaborate the following in detail: a) Android Notification b) Android Bluetooth c) Android Camera d) Concurrency	VI	CO4	4*4=16	
9	a) How are API keys necessary for Google Maps? What are the steps to create API keys? Explain in detail. b) What do you mean by Flutter? Explain its features. List its advantages and disadvantages.	IV	CO4	2*8=16	

	<b>DPG STM, GURUGRAM</b> <b>(NAAC Accredited 'A' Grade College)</b> <b>Sessional Exam</b> <b>Course Name: MCA</b> <b>Subject Name: Computer Vision</b> <b>Subject Code: 21MCA23DA1</b>	<b>Semester: 3RD</b> <b>Session: NOVEMBER</b> <b>Academic Year: 2024</b>
		<b>Total marks: 80</b> <b>Time Duration:</b> 03:00 hrs.

*Note: 1. Question no. 1 is compulsory.*  
14. Attempt any one question from each unit.  
15. Marks are indicated against the questions.

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	Write formula for hamming distance used for template matching with its notations used ? ii) give two reasons of using gray scale image instead of color image for processing ? iii) what are the problems associated with circle detection approach ? iv) how does 3D vision created ? explain ? v) draw spline based motion using example of your choice ? vi) how are eigen faces associated with recognition ? vii) define particle filter . what is it used for ? viii) What is the two stage recognition scheme ?	I	CO1 CO2 CO3 CO4	16 2 2 2 2
<b>Unit-1 (Attempt any one question)</b>				
2	Write the algorithm for adaptive thresholding . how is thresholding done if the illumination is not sufficiently uniform ? Explain its types ? ii) what is distance function ? how it is used in analysis of shapes and regions ? explain any two distance functions taking examples images of your choice ?	I	CO1	16
3	Write short note on the following :- a) Size filtering b) Hamming occlusion ii) what is the process of erosion used for ? how is it related to dialation ? explain ?	I	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	What is hough line detection ? write the hough line detection algorithm and explain the terms : image space , parameter space and the association with point and lines with suitable diagram and equations .?	I	CO2	16
5	Explain the use and procedure of chord bisection method with diagram . also discuss about the robustness of this method . how can we overcome the speed related issue in it ? explain ?	II	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	Write detailed notes of the following with diagram , suitable terms and equations ? a) Photometric stereo b) Volumetric representation c) Translational alignment	I	CO3	16
7	Explain the term surface gradient , surface normal and unit surface normal along with its equation . how its gradient space is associated with its normal space ? draw diagram to explain concept ?	II	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	How is field of view related to multiple cameras ? explain the process of combining views from multiple cameras for overlapping fields of view ?	I	CO4	16
9	What are the assumptions in human gait analysis ? explain the construction of kinematic model of human body using stick skeleton mode for the lower human body done .	I	CO4	16

	<b>DPG STM, GURUGRAM</b> <b>(NAAC Accredited 'A' Grade College)</b> <u>Sessional Exam</u> <b>Course Name: MCA 3<sup>rd</sup> SEM</b> <b>Subject Name: Network Programming Elective II</b> <b>Subject Code:21MCA23DB1</b>	<b>Semester: 3rd</b> <b>Session: NOV</b> <b>Academic Year:2024-25</b>
		<b>Total marks:80</b> <b>Time Duration:</b> <b>03:00 hrs.</b>

- Note: 1. Question no. 1 is compulsory.*
16. *Attempt any one question from each unit.*
17. *Marks are indicated against the questions.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	a).What are TCP/IP headers? b). What are blocking sockets? c). Explain Firewall and security techniques in networks. d). What are steps for creating server?	II I,II II 1	CO1 CO2 CO3 CO4	4*4
<b>Unit-1 (Attempt any one question)</b>				
2	What is the syntax and purpose of each of the following with examples: Socket, bind, accept, listen, fork, connect.	II	CO1	16
3	Explain UNIX OS and environment. Also explain various UNIX domain protocols. Write about TCP reserved ports.	I	CO1	16
<b>Unit-2 (Attempt any one question)</b>				
4	a). What is API? Explain various types of API techniques in computer networks. b). What are Java beans? What is the utility of Java Beans?	II	CO2	16
5	Explain with diagrams following diagrams I/O models provided by UNIX: blocking I/O, non -blocking I/O, signal driven I/O, blocking socket.	I	CO2	16
<b>Unit-3 (Attempt any one question)</b>				
6	a).What is COBRA? Discuss its role with diagrams. b). What is digital signature? What is cryptography?	I,II	CO3	16
7	What is WAP architecture? What are its services? Explain with examples.	I,II	CO3	16
<b>Unit-4 (Attempt any one question)</b>				
8	What are the steps to retrieve file from HTTP server? What is select call?	VI	CO4	16
9	What is URL? How will you retrieve documents using URL?	VI	CO4	16

	<b>DPGDEGREECOLLEGE,GURUGRAM</b> <b>ACCREDITED NAAC 'A' GRADE &amp; AFFILIATED TO</b> <b>MDU,ROHTAK</b> <u>SESSIONAL EXAM</u> <b>Course Name: MCA Semester: 3<sup>rd</sup> Sem.</b> <b>Subject Name&amp; Code: Open Elective (16ENVO2)</b>	<b>Session: 2024-25</b> <b>Academic Year:2024</b>
		<b>Total marks:80 Duration: 03</b> <b>Hours</b>

- Note: 1. All questions carry equal marks. 2. First question is compulsory. 3. Attempt one question from each unit.*

Q.N	Questions	Blooms Level	COs	Marks
<b>Compulsory Question</b>				
1	<p>Explain:</p> <p>A. Climatology E. Mitigation            B. Rapid Onset disaster F. IDNDR            C. IFMISG. Triage System            D. L-wave H. Embankment</p>	I,II,III	1,2,3	16
<b>Unit-1</b>				
2	Explain types of disaster in various ways with suitable example.	II	1	16
3	Explain coastal erosion and its impact on population.	II	1	16
<b>Unit-2</b>				
4	Explain tropical cyclone in details with suitable example.	II	2	16
5	Explain floods and hazards associated with flooding.	II	2	16
<b>Unit-3</b>				
6	What do you understand by ground motion? Explain with diagram and example.	II	3	16
7	Explain UN drafts for resolution on strengthening of coordination of humanitarian emergency assistance.	II	3	16
<b>Unit-4</b>				
8	Explain any case study related to floods in Indian region.	II	2,3	16
9	Explain steps involved for disaster management if you are in specific situation at cyclone zone.	II	2,3	16

