Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U4826

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Fourth Semester

Biomedical Engineering

21UIT426 -DATA STRUCTURES USING OBJECT ORIENTED PROGRAMMING

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1.	List out the applications of OOP.	CO1-U
2.	Write a C++ program to find the given number is Odd or Even.	CO2-App
3.	Define inheritance and how do defining a derived class with example.	CO1-U
4.	Mention the role of this pointer.	CO1-U
5.	Define data structures.	CO1-U
6	What is the postfix form of this expression? (A+B)*(C/D).	CO2-App
7	Write the routine for pre-order traversal.	CO1-U
8	Draw a complete undirected graph having five nodes.	CO2-App
9	Define sorting.	CO1-U
10	Differentiate quick sort and merge sort.	CO1-U

PART – B (5 x 16= 80 Marks)

11.	(a)	Discuss the concepts of Object Oriented Programming with illustrations and examples.	CO1-U	(16)
		Or		
	(b)	Explain the control structures in C++ with demonstrate neat diagram with example.	CO1-U	(16)
12.	(a)	Write a C++ program to write the text in a file. Read the text from the file, from end of the file. Display the contents of file in reverse order. Append the contents to the existing file.	CO2-App	(16)
		Or		

	(b)	Develop a C++ program to calculate the cutoff marks for a student based on higher secondary marks and entrance score using Multiple Inheritance.	CO2-App	(16)
13.	(a)	Explain the array representation of stack and queue with example.	CO1-U	(16)
		Or		
	(b)	Explain the linked list and its types with example.	CO1-U	(16)
14.	(a)	Explain binary tree and traversing a binary tree with suitable example.	CO1-U	(16)
		Or		
	(b)	Explain the various representation of graph with example in detail.	CO1-U	(16)
15.	(a)	Develop an algorithm to implement shell sort and Explain. Show the trace of the algorithm for following key sequence. 45, 15, 20,5,10.	CO2-App	(16)
		Or		
	(b)	Develop an algorithm for merge sort and Explain. Show the trace of the algorithm for following key sequence. 85,24,63,45,17,31,96,50.	CO2-App	(16)