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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2024 Supplementary Examinations

Programme: B.E. **Semester: V**
Branch: Electronics and Communication Engineering **Duration: 3 hrs.**
Course Code: 22EC5PE1OP **Max Marks: 100**
Course: Object Oriented Programming Using C++

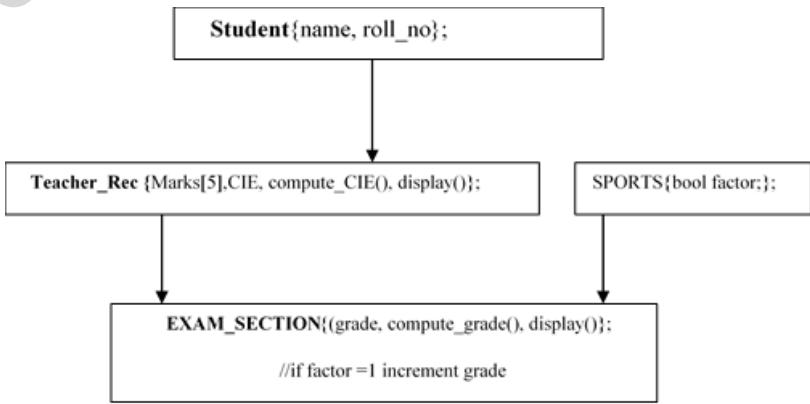**Instructions**: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed. Syntax errors are not intentional.
3. *For every code meaningful comments and sample output MUST be given.*

			UNIT - I	*CO*	*PO*	**Marks**
1	a)		Create a structure to store employee details of an organization. Write a function to store data of 100 employees using dynamic memory allocation concept.	*CO1*	*PO1*	**10**
	b)		Realize a 4 function calculator using switch case statement.	*CO1*	*PO1*	**10**
			UNIT - II			

2	a)		Develop a class called STring with appropriate data functions for the following user program to compile:
			
			int main()
			{
			STring S1, S2("GOOD"), S3("DAY"),S4(S2);
			S1.display();
			S2.display();
			S1.compare(S2); // To compare the strings S1 and S2 and print the result
			return 0;
			}
				CO2	*PO3*	**10**

	b)		Create a class BMS_ECE to hold 'n' number of integer data items. 'n' is to be specified by the user. Set aside memory to store the data dynamically. Include functions for the following program to compile:
			
			int main()
			{ int key; // item to be searched
			BMS_ECE obj1,obj2(100); // create objects of specified size
			Bool res = obj1.search(key); // To compare the strings S1 and S2 and print the result
			return 0;
			}
				CO2	*PO3*	**10**

			UNIT - III			

3	a)		Develop a class called time that has information about hours, minutes and seconds. Include appropriate functions for the following user program to compile:
			
			int main()
			{
			time t1, t2(0), t3(0,1,22); //t1 is to be initialized to 0 hrs, 0 min, 0 secs
			t1 = t1+t2;
			t2 = t1+t3;
			return 0;
			}
				CO1	*PO1*	**10**

	b)		Create a class ClassA with one private, one protected and one public data member. Derive ClassB, ClassC and ClassD from ClassA using private, protected and public inheritance mode. Depict the implication of the inheritance mode on the access of data.	*CO1*	*PO1*	**10**
			OR			

4	a)		Develop a class '**distance'** with integer type feet and float type inches as data members. Write appropriate member functions for the program to compile.
			int main()
			{ distance d1, d2(0), d3(1,8);
			d2=-d1;
			d3+=d1; // add the contents of d1 with d3 and store the result in d3
			d1+=2; //increment feet data by 2
			}
				CO2	*PO3*	**10**

	b)		Develop classes to realize the structure by choosing appropriate mode of access and also justify your choice of access. Class contents (data members and functions) are also included in the diagram. Analyze the problem you would encounter while realizing the above structure and suggest solutions for the same.	*CO2*	*PO3*	**10**

5	a)	Write an application that can be used to create account passwords. Input a password from user that contains 8 characters of which decimal point (ASCII 46), capital alphabets (ASCII 65 – 90), and repeated characters are not to be present. Use the exception handling feature to create this app. Warn the user appropriately in case of ANY wrong password entry	CO2	PO3	**10**
	b)	Create an application that compares two data of any given type and prints the result. Outline the usage of your app.	CO2	PO3	**10**

UNIT - V

6	a)	Create a file to store userID and password, both 5 characters each. Write data of 10 users onto a file 'USERDATA'.	CO2	PO3	**10**
	b)	Write codes for the following data to be printed as per the given format.	CO2	PO3	**10**

O	U	T	P	U	T		
				8	.	6	8
					+	2	1
			*	*	*	1	9
#	#	#	#	1	2		

OR

7	a)	With syntax outline the working of any 4 IOstream functions.	CO1	PO1	**10**
	b)	Create an application to store student information in a file 'BMS.TXT'.	CO2	PO3	**10**

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