Dr. A.P.J. Abdul Kalam Technical University (AKTU) · B.Tech Theory Examination

Object Oriented System Design with C++

KCS054 · 2023

Time: 3 Hours **Max. Marks: 70**

Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1(a)	Define data encapsulation. Give example.	2	U1
1(b)	Define generosity.	2	U1
1(c)	List the features of Component Diagram.	2	U2
1(d)	Explain the existence of swimlanes in activity diagram.	2	U2
1(e)	List the features of object oriented language.	2	U4
1(f)	Describe the term enum.	2	U4
1(g)	Define friend function with example.	2	U5
1(h)	Explain the use of typecasting?	2	U5
1(i)	Explain this pointer.	2	U5
1(j)	Give a brief description about function overriding.	2	U5

SECTION B

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2(a)	Explain the architecture of UML.	10	U1
2(b)	Discuss the purpose of UseCase Diagram and explain its different notations.	10	U2
2(c)	Discuss the following: (i) Robustness, (ii) Extensibility, (iii) Reusability. Discuss with respect to object-oriented system design.	10	U4
2(d)	Explain the difference between Macro and Inline function.	10	U4
2(e)	Give a brief description about constructor with the reference of a C++ program. Also explain its different types.	10	U5

SECTION C

3(a)	Explain the principles and importance of modelling.	10	U1
3(b)	Discuss the conceptual model of UML in detail.	10	U1
4(a)	Demonstrate the different relationships used in class diagram with their notations with the help of a neat class diagram.	10	U1
4(b)	Illustrate the significance of collaboration diagram and also draw a neat collaboration diagram for reserving a room in a hotel from its website.	10	U2
5(a)	Discuss in detail about JSD and SA/SD.	10	U3
5(b)	Compare Object Oriented Programming and Procedural programming.	10	U4
6(a)	Discuss virtual function. How it is different from pure virtual function? Write a program in C++ for it.	10	U5
6(b)	Explain the following briefly: (i) Virtual function (ii) Friend function (iii) Inline function	10	U5
7(a)	Explain polymorphism. Devise its implementation in C++.	10	U5
7(b)	Construct a C++ program depicting the concept of multiple inheritance.	10	U5

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