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Question Paper Code: 2433207

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024

Third Semester

Artificial Intelligence and Data Science

U20AI303 – OBJECT ORIENTED PROGRAMMING

(Regulation 2020)

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions

PART – A

(10 x 2 = 20 Marks)

1. What is object oriented programming?
2. Differentiate constant and variable.
3. Define: Encapsulation.
4. What do mean by data abstraction?
5. What is inheritance? Give the general syntax.
6. What are the two types of exceptions in C++?
7. How can the templates be used in C++?
8. What are the advantages of generic programming?
9. What do mean by pure abstract class?
10. Define: Package.

PART – B

(5 x 16 = 80 Marks)

11. (a) (i) What is a data type in C++? Describe different data types with an example program. (8)
- (ii) What are the different types of operators available in C++? Explain with an example operator precedence and associativity. (8)

(OR)

- (b) What are function pointers in C++? Also explain how the function pointer can be used to call a function or passed as a parameter. Explain with example program. (16)

12. (a) (i) What is constructor? Explain the different types of constructors in C++. (10)
ii. Differentiate between constructor and destructor. (6)

(OR)

- (b) What is operator overloading? List the operators that cannot be overloaded. Write a C++ program to overload binary + operator so that it can add two complex numbers. (16)

13. (a) What are different forms of inheritance? Explain them with suitable example programs. (16)

(OR)

- (b) What is exception handling? Write a detailed C++ program to show the use of try, catch, throw and nested try. (16)

14. (a) (i) Explain in detail Function Template and Class Template with an example. (8)

(ii) Write a C++ program using function template to find the sum of two integers or floating point type of data. (8)

(OR)

- (b) (i) Explain Generic functions and Generic class with examples. (8)
(ii) What is Standard Template Library? How is it different from the C++ Standard Library? (8)

15. (a) (i) Explain friend function with example and list sum of the special properties of friend function. (8)
(ii) State the need of passing objects as arguments. Discuss different ways to pass objects as arguments to a function. (8)

(OR)

- (b) (i) Discuss the usage of Formatted and unformatted I/O operation with an example. (8)
(ii) Explain in detail the various functions required for random access file operations. (8)