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

Question Paper Code : BS2308

M.C.A. DEGREE EXAMINATION, AUGUST/SEPTEMBER 2017.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write a C++ program that uses a function to print whether the given number is prime or not.
2. Define class and object with an example.
3. When do we declare a member of a class static? What are the characteristics of static members of a class?
4. What is the function of destructor?
5. List the operators that cannot be overloaded and give reason be overloaded.
6. Write a short note about private member functions.
7. Differentiate between a template class and class template.
8. What is STL?
9. What is the need for typing conversions.
10. List any four standard exceptions.

PART B — (5 × 16 = 80 marks)

11. (a) Compare and contrast the structured and object oriented programming paradigms. (16)

Or

(b) Create a class Employee with data members employeeID, name, designation and salary. Write methods getEmployee( )-to take user input, showOrder( )-to display grade of employees based on salary, showEmployee( ) to display employee details. (16)

12. (a) (i) What is a constructor? Can there be more than one constructor for a class? Justify. (10)

(ii) Differentiate local variable and a data member with an example. (6)

Or

(b) With and illustration, demonstrate how a pointer to an object can be used to access the members of that object? (16)

13. (a) Create a class Complex with two data members real and imaginary. Create two suitable overloaded operator functions to increase the number and add two complex numbers. (16)

Or

(b) Explain the different types of iterator with example. (16)

14. (a) (i) Explain the use of the following notation in a C++ program Template <typename T> Array <T>

::Array(int s) (8)

(ii) Write a note on function templates and explain how parameters are passed to function template with suitable example. (8)

Or

(b) Explain function adaptors in detail. (16)

15. (a) (i) What is a virtual function? Explain them with an example. (8)

(ii) How exception handling is done in C++? Explain with an example. (8)

Or

(b) Discuss about the different types of inheritance in C++ with suitable example. (16)

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Question Paper Code : S1308

M.C.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2016.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are classes and objects?

2. Define function overloading with example.

3. Compare struct of C and struct of C++.

4. What is a destructor? Give an example.

5. Define Abstract Data Type. Give example.

6. List out the operators which cannot be overloaded.

7. With example, define function template.

8. Specify the purpose of STL.

9. Define multiple inheritance.

10. Give an example for multiple-catch exception statement.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain Arrays of Pointers and Pointer to Array with examples.

(ii) Write a program to illustrate the use of call by reference. (8 + 8)

Or

(b) (i) Explain any two storage classes with usage.

(ii) Write a program to add values of two vectors using pointers. (8 + 8)

12. (a) (i) Explain various types of constructors with examples.

(ii) Implement Queue structure using C++. (8 + 8)

Or

(b) (i) What are Bit Fields? Give its usage.

(ii) Explain Member Function, Static Member Function and Constructor with example. (4 + 12)

13. (a) Explain Unary and Binary Operator overloading with rules and example. (16)

Or

(b) Write note on : Iterators and Containers. (16)

14. (a) Define template for list and use it for inserting elements and displaying the elements. (16)

Or

(b) (i) What are parameterized templates? Give example.

(ii) Explain the significance of function adaptors. (8 + 8)

15. (a) (i) Discuss the rules with example of virtual functions.

(ii) What is Code Reusability? Explain with example. (8 + 8)

Or

(b) List the various Inheritance concepts. Explain any two concepts in detail with an example. (16)

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Question Paper Code : 80308

M.C.A. DEGREE EXAMINATION, AUGUST 2015.

Second Semester

DMC 1922 – OBJECT ORIENTED PROGRAMMING

(Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is class and how does it accomplish data hiding?

2. Define scope and life of a variable.

3. What is 'this' pointer and what are the applications of 'this' pointer?

4. What is a static member function and what are the properties of static member function?

5. Name the operators which cannot be overloaded.

6. Differentiate between static and dynamic polymorphism.

7. What is STL and how it is differs from standard C++ library?

8. Differentiate between class template and template class.

9. What is an abstract class and why do we need abstract class?

10. What are the advantages of using exception handling mechanism in a program?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the basic concepts of object oriented programming in detail. (10)

(ii) With suitable example, explain how a function is invoked using pointer. (6)

Or

(b) (i) What is a pointer? Explain the types of pointer each with an example. (8)

(ii) Explain how objects are passed to and returned from a member function using pointer. (8)

12. (a) (i) What is a constructor? Describe the types of constructor each with an example. (10)

(ii) What is a member function? Explain the advantages and disadvantages of declaring member function inside and outside the class. (6)

Or

(b) (i) What are bit fields? Illustrate the use of bit fields with an example. (6)

(ii) What is meant by overriding and overloading of function? Illustrate overriding and overloading of functions in C++ with suitable example. (10)

13. (a) (i) Explain pointer to pointer and pointer to function with suitable example. (6)

(ii) Write C++ program to overload '+' and '-' to find the sum and difference of two time value given in HH:MM:SS format. (10)

Or

(b) (i) What is container? With suitable example, explain how container is different from inheritance. (6)

(ii) How many types of iterators are there in C++ STL? Explain input and output iterators each with an example. (10)

14. (a) (i) What is function template and what are the advantages of function template? (6)

(ii) With suitable example explain how a template function is overloaded with an explicit function. (10)

Or

(b) Briefly explain the components of C++ Standard Template Library. (16)

15. (a) (i) With suitable example, explain data conversion from one class type to another class type. (8)

(ii) What is exception specification? With suitable example, explain when it is required. (8)

Or

(b) (i) Explain multiple and multi-level inheritance each with suitable example. (10)

(ii) What is virtual function? Give the rules for virtual functions. (6)

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Question Paper Code : 46308

M.C.A. DEGREE EXAMINATION, AUGUST 2014.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State any two advantages of Object Oriented programming.
2. Define Assertion.
3. Write the structure of a Class.
4. What is the purpose of 'this' pointer?
5. Define polymorphism.
6. Define function overloading.
7. Define Templates in C++.
8. What is meant by STL?
9. Write about Virtual Functions.
10. What is Multilevel Inheritance?

PART B — (5 × 16 = 80 marks)

11. (a) List out and explain the features of Object Oriented programming. (16)

Or

(b) Explain the following with example :

(i) Scope and storage classes (8)

(ii) Arrays and pointers. (8)

12. (a) Explain the concept of Constructors and Destructors with an example Program. (16)

Or

(b) Elucidate on :

(i) Reference pointers (8)

(ii) Implementation of simple ADTs with example. (8)

13. (a) Write a C++ program using the concept of Operator Overloading. (16)

Or

(b) Explain with an example, program the Inline functions and Function overloading. (16)

14. (a) Discuss in detail on (i) Class templates (ii) Function Adaptors. (16)

Or

(b) Elucidate on Function templates. How do you overload a template functions. (16)

15. (a) Explain the concept of Inheritance with its types using an example program. (16)

Or

(b) Discuss in detail about Exception handling with example. (16)

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Question Paper Code : 96308

M.C.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2014.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulations 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Encapsulation.
2. List out the uses of Overloading Function.
3. Give one example for the type Struct.
4. What do you meant by Abstract Data Type?
5. What is the use of Pointer Operator?
6. What is Polymorphism?
7. Differentiate between Function Templates Class Templates.
8. List out the components of STL.
9. Give one example for Virtual Function.
10. How Template is acting as an alternative for inheritance?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the advanced concepts available in Object Oriented Programming compare to Traditional Programming.

Or

(b) (i) Explain Functions and Pointer with example.

(ii) Explain Call by reference with example.

12. (a) With an example explain types of Constructors.

Or

(b) Write a C++ program for Structure Pointer Operator.

13. (a) (i) Differentiate between Unary and Binary Operator Overloading.

(ii) Explain List iterators.

Or

(b) Write an algorithm and program to implement visitation through iterators.

14. (a) Explain the four categories of STL algorithm library.

Or

(b) Write a detailed note on Class Templates with example.

15. (a) Explain the concept of Polymorphism through Virtual Function.

Or

(b) What is Run – Time Type Identification? Give example.

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Question Paper Code : 86308

M.C.A. DEGREE EXAMINATION, AUGUST 2013.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define encapsulation.

2. Give an example for enumerated data type.

3. Define 'this' pointer.

4. How classes are different from structures?

5. List out the operators that cannot be overloaded.

6. Give the syntax of operator function.

7. What are called container adaptor classes?

8. State different categories of algorithms in STL algorithms library.

9. What is called abstract class? What is the use of it?

10. Differentiate errors and exceptions.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write a C++ program to calculate the salary for 10 employees (which includes basic pay, HRA, MA, PF, Tax, LIC) using pointer to an array. (8)

(ii) Differentiate call-by-value and call-by-reference with examples. (8)

Or

(b) (i) Discuss about various storage classes in C++ with suitable examples. (6)

(ii) Briefly discuss the following concepts with examples.

(1) Copy constructor (5)

(2) Objects as function arguments (5)

12. (a) (i) Create a list of names. Write a C++ program to display the names with six and above characters using arrays of pointers. (8)

(ii) Write a short note on the following with necessary example.

(1) Inline function (4)

(2) Static member and static function. (4)

Or

(b) (i) Write a C++ program to calculate total sales of three zones by three salesmen. Consider Zones and salesmen information in separate classes. (8)

(ii) Explain the following concepts with example.

(1) Private member functions (4)

(2) Parameterized constructors and destructors. (4)

13. (a) (i) Discuss the usage of overloaded function as friend function. (6)

(ii) Write a program to concatenate two strings by overloading '+' operator. (10)

Or

(b) (i) Write a program to multiply a n × m matrix with a scalar value using operator overloading concept. (8)

(ii) Explain the concept of visitation with iterators and containers with examples. (8)

14. (a) (i) Write a generic function template to check how many elements are similar in two arrays. (8)

(ii) Can the function template be overloaded? How? Give algorithm to select appropriate function in overloading. (8)

Or

(b) (i) Write an example program with class template and function adaptor. (8)

(ii) How the friend functions are considered in class templates? (4)

(iii) Discuss: Static members in class template. (4)

15. (a) (i) Write a program to have information about books in a library. Create another class with student information. Derive a class for issue of books from the classes 'book' and 'student'. Derive another class for return of books from the class 'issue'. Calculate fine for all the students who have overdues. (12)

(ii) What do you mean by pure virtual functions? (4)

Or

(b) (i) Explain Hybrid inheritance with an example. Create pointer to a member in derived class. Can the pointer be used for base class member? Why? (8)

(ii) Illustrate the following with examples.

(1) Try..... multiple catch statements. (4)

(2) Rethrown exceptions. (4)

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Question Paper Code : 87508

M.C.A. DEGREE EXAMINATION, FEBRUARY 2012.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the various storage classes.

2. What are the different Function call mechanisms?

3. What is meant by Access specifier?

4. What is meant by a Destructor?

5. Give any five Unary operators in Programming Languages.

6. Give one example of operator overloading.

7. Differentiate Run-time and Compile-time Polymorphism.

8. What is a Template?

9. List any five keywords in C++ to handle Exceptions.

10. Differentiate Multiple inheritance and Multilevel inheritance.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the Object Oriented Concepts. (10)

(ii) Explain the merits of Object oriented programming over Structured programming. (6)

Or

(b) (i) Explain the usage of Enumeration with an example. (8)

(ii) Explain call by reference with an example program. (8)

12. (a) Write a C++ program that stores Customer accounts with the attributes: Name of the depositor, account no., type of account, and balance amount.

(i) To create array of objects to store ten customers

(ii) Assign initial values to customers

(iii) To deposit and withdraw an amount

(iv) To display the balance for given valid account no. (16)

Or

(b) (i) Explain the use of Constructor and use of Destructor in programming with example. (10)

(ii) Explain the use of Static data members and this pointer with example. (6)

13. (a) Explain any four operations that can be performed by operator overloading with example. (16)

Or

(b) (i) Explain the use of Inline function with example. (7)

(ii) Write a C++ program to calculate the areas of circle, rectangle, and square using Function overloading. (9)

14. (a) (i) Write a program to create a template to find the maximum value stored in an array. (8)

(ii) Explain Function templates with an illustration. (8)

Or

(b) Explain Function Templates with multiple parameters and Overloading of Template Functions with example. (16)

15. (a) Explain the various types of Inheritance with simple programs. (16)

Or

(b) Write in detail on Exception handling in C++ with example. (16)

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Question Paper Code : 96745

M.C.A. DEGREE EXAMINATION, AUGUST 2011.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is dynamic binding?

2. What is a storage class and what are the types of storage classes in C++?

3. What is the use bit fields? Give the syntax for bit field member declaration.

4. What are the applications of *this* pointer?

5. What is meant by runtime polymorphism?

6. What is difference between overloaded functions and function templates?

7. What is a function adaptor and what are its uses?

8. What are the uses of template?

9. What is an exception specification and when it is used?

10. What is virtual base class?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain call by value and call by reference with suitable examples. (6)

(ii) Discuss about the key concepts of object oriented programming in detail. (10)

Or

(b) (i) Explain function overloading with an example. (5)

(ii) Write a program to declare a class. Declare a pointer to class and initialize and display the content of the class member. (6)

(iii) What are the applications of reinterpret cast operator? (5)

12. (a) (i) What is a constructor and what are the different types of constructors? Explain with suitable examples. (10)

(ii) Explain static member functions in detail. (6)

Or

(b) (i) What are aggregate types in C++? Illustrate initialization of aggregate types each with suitable example. (8)

(ii) Discuss about the significance of the keywords private, public and protected. (8)

13. (a) (i) Write C++ program to overload '+' and '–' operators to find the sum and differences of two complex numbers. (8)

(ii) What is a container and how it is differ from inheritance? Describe the uses of Containers. (8)

Or

(b) (i) What is operator overloading? Give the rules for operator Overloading. (6)

(ii) What are List and Iterators and what are the advantages of List and Itertators? (6)

(iii) Name the pointer operators and mention their usages. (4)

14. (a) (i) What is a class template? Illustrate the use of class template with suitable example. (8)

(ii) Explain any four functions defined in the <algorithm>. (8)

Or

(b) (i) Explain function template with suitable example. (8)

(ii) With suitable example explain how a template function is overloaded with an explicit function. (8)

15. (a) (i) Explain how base class constructors are used in the derived class with suitable example. (8)

(ii) Explain exception handling mechanism in C++ with an example. (8)

Or

(b) (i) Explain multiple and multi level inheritance with suitable examples. (8)

(ii) Explain how run-time polymorphism is achieved in C++ with suitable example. (8)

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

Question Paper Code : 85808

M.C.A. DEGREE EXAMINATION, FEBRUARY 2011.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is object orientation? How it is related with programming paradigm?

2. Write the definition of pointer variables with respective syntax.

3. Describe the concept of ADT.

4. What is encapsulation? Write the merits of encapsulation?

5. Describe the list of iterators.

6. Write the difference between function templates and class templates.

7. State the features of STL.

8. How does the static member differ from other data members in a class?

9. Write the inheritance hierarchy in a method.

10. What is exception handling?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the various elements of Object oriented programming. (10)

(ii) Write the merits and demerits of Object oriented methodology. (6)

Or

(b) (i) Describe the concept of function overloading with suitable examples. (9)

(ii) Write the types of scope and storage classes with examples. (7)

12. (a) (i) Explain the types of constructors with example.

(ii) Write the steps of implementing simple ADT's.

Or

(b) (i) Distinguish between struct and union with suitable code. (8)

(ii) What is a class? Explain the relationship between classes and objects. (8)

13. (a) Write in detail about unary operator overloading and binary operator overloading with examples. (16)

Or

(b) (i) What are inline functions and recursive functions? Give examples. (6)

(ii) Write a program to find the GCD of two numbers using Euclid's recursive algorithm. (10)

14. (a) Write short notes on :

(i) Parameterizing. (8)

(ii) Function Adaptors. (8)

Or

(b) Describe the has-a relationship using class template containership in detail along with the necessary code.

15. (a) (i) What are Virtual functions? Write the rules in creating virtual functions? (8)

(ii) How does C++ enable code reuse? Explain. (8)

Or

(b) (i) Write short notes on Run-time type identifications. (8)

(ii) Describe the exception handling mechanism of C++, giving an example. (8)

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Question Paper Code : GG 2564

M.C.A. DEGREE EXAMINATION, AUGUST 2010.

Second Semester

DMC 1922 — OBJECT ORIENTED PROGRAMMING

(Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you meant by life and scope of a variable?

2. Distinguish between data abstraction and data encapsulation.

3. List the characteristics of static members.

4. What does *this* pointer points to and what are the applications of *this* pointer?

5. What is meant by operator overloading and list the operators that cannot be overloaded?

6. What is a container and how it is different from inheritance?

7. Distinguish between the terms class template and template class.

8. What are the uses of function adaptors?

9. What is a virtual function and why do we need virtual functions?

10. What is meant by reusability and how C++ support reusability concept?

PART B — (5 × 16 = 80 marks)

11. (a) (i) How pointer to a function is declared? Explain array of function pointer with suitable example. (8)

(ii) Describe the various enumeration types in detail with examples. (8)

Or

(b) (i) Describe various storage classes in detail with example. (8)

(ii) Explain call by value and call by reference with suitable example. (8)

12. (a) (i) Explain the use of static data member and static function with suitable example. (8)

(ii) What is a constructor? Describe various types of constructors in detail. (8)

Or

(b) (i) What is meant by nesting of member function? Illustrate nesting of member functions with suitable example. (8)

(ii) Discuss about different levels of access protection available in C++. (8)

13. (a) (i) State the rules for operator overloading. (6)

(ii) What is the use of List container? Describe the uses of various member function of the list class with the help of suitable example. (10)

Or

(b) (i) Write a C++ program to overload '+' and '–' operator to perform matrix addition and subtraction. (8)

(ii) Write a C++ program to implement Unary operator overloading. State the need for containers in object oriented programming. (8)

14. (a) (i) What is a class template? Explain the use of a template class with suitable example.

(ii) Write a template function to find the minimum and maximum value in an array.

Or

(b) (i) Explain overloading of function template with suitable example.

(ii) What is generic programming and how it is implemented in C++?

15. (a) (i) Explain multiple and multilevel inheritance each with suitable example. (8)

(ii) Write a C++ program containing a possible exception. Use a try block to throw it and a catch block to handle it properly. (8)

Or

(b) (i) With suitable example, explain how base class constructors are executed in derived class. (8)

(ii) State the rules for virtual functions. (4)

(iii) What are the advantages of using exceptions handling mechanism in C++ program? (4)
