MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA- 8

(Affiliated to Krishna University, Machilipatnam)

SYLLABUS

Subject: Computer Science **Semester: III**

Course Title: Programming with C & C++ **Course Code:20CSCCPC33**

No. of Hours: 45 **LTP: 300** **Credits: 3**

Objectives:

- To develop programming skills
- To choose the right data representation formats based on the requirements of the problem
- To plan structure and content, writing, updating and modifying computer programs for user solutions

Course Outcomes

CO1: Explain the basic concepts of programming language, including the use of algorithms.

CO2: Develop programs on arrays and strings.

CO3: Apply the concepts of functions, structures and unions.

CO4: Differentiate between structured and object -oriented programming.

CO5: Apply various forms of inheritance.

UNIT - I **(9 Hrs.)**

Introduction and Control Structures

Algorithms, Notations, Design, Flowcharts**,** History of 'C' - Structure of C program – C character set, Tokens, Constants, Variables, Keywords, Identifiers – C data types - C operators - Standard I /O in C - Applying if and Switch Statements

UNIT - II **(9 Hrs.)**

Loops, Arrays and Strings

Use of While, Do While and For Loops - Use of Break and Continue Statements, Array Notation and Representation - Manipulating Array Elements - Using Multi dimensional Arrays, Declaration and Initialization of String Variables - String Handling Functions –Defining

UNIT - III **(9 Hrs.)**

Functions, Structure and Unions

Functions - Function Call - Call By Value, Call By Reference – Recursion

Structures: Declaration of a structure and defining a structure variable, Member Accessing.

Unions: Declaration of a Union, defining a union variable,Member Accessing, Difference between Structures and Unions.

UNIT - IV **(9 Hrs.)**

Classes and Objects

Introduction to OOP and its basic features - C++ program structure - Classes and objects - Friend Functions-Constructor – Types of constructors – Destructors.

UNIT - V **(9 Hrs.)**

Inheritance

Inheritance - Types of Inheritance -Types of derivation- Public – Private - Protected Hierarchical Inheritance - Multilevel Inheritance – Multiple Inheritance - Hybrid Inheritance

Co-Curricular Activities

- Assignments on problem solving
- Student presentations and seminars
- Online quizzes

Prescribed Books

1. The C++ Programming Language BjarneStroustrup
2. C++ Primer Stanley B. Lippman, JoséeLajoie, Barbara E. Moo

Reference Books

1. E. Balagurusamy "Object oriented programming with C++
2. R.Ravichandran "Programming with C++"
3. Mastering C by K R Venugopal and Sudeep R Prasad, McGraw Hill
4. Expert C Programming: Deep Secrets Kindle Edition Peter van der Linden (5) Let Us C YashavantKanetkar
5. The C++ Programming Language BjarneStroustrup
6. C++ Primer Stanley B. Lippman, JoséeLajoie, Barbara E. Moo

Online Resources

https://www.tutorialspoint.com/cprogramming/index.html
https:// www.programiz.com/c-programming
https:// www.w3schools.in/c-tutorial/
https:// www.cprogramming.com/tutorial/c -tutorial.html
https:// www.tutorialspoint.com/cplusplus/index.html
https:// www.programiz.com/cpp-programming
https:// www.learn-cpp.org/

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8
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Blueprint

Subject: Computer Science **Semester: III**
Course Title: Programming with C & C++ **Course Code:20CSCCPC33**
Time: 3Hrs. **Max. Marks: 100**

SECTION – A

Answer **ALL** questions **20 x 1 = 20M**

Q. No.	UNIT	Marks Weightage	RBT LEVEL
1	I	1	**No. of questions to be set** RBT1 – 8 RBT2 – 8 RBT3 – 2 RBT4 – 2
2	I	1	
3	II	1	
4	II	1	
5	III	1	
6	III	1	
7	IV	1	
8	IV	1	
9	V	1	
10	V	1	
11	I	1	
12	I	1	
13	II	1	
14	II	1	
15	III	1	
16	III	1	
17	IV	1	
18	IV	1	
19	V	1	
20	V	1	

SECTION – B

Answer any **FOUR** questions **4 x 8 = 32M**

Q. No.	UNIT	Marks Weightage	RBT LEVEL
21	I	8	**No. of questions to be set**
22	II	8	RBT1 – 2
23	III	8	RBT2 – 2
24	IV	8	RBT3 – 1
25	V	8	RBT4 – 1
26	I / II / III / IV / V	8	

SECTION – C

Answer any **FOUR** questions **4 x 12 = 48M**

Q. No.	UNIT	Marks Weightage	RBT LEVEL
27	I	12	**No. Of questions to be set**
28	II	12	RBT1 – 2
29	III	12	RBT2 – 2
30	IV	12	RBT3 – 1
31	V	12	RBT4 – 1
32	I / II / III / IV / V	12	

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA – 8
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Model Question Paper

Subject: Computer Science **Semester: III**
Course Title: Programming with C & C++ **Course Code:20CSCCPC33**
Time: 3Hrs. **Max. Marks: 100**

SECTION – A

Answer **ALL** questions. **20 x 1 = 20M**

1. A program is made up of individual syntactic elements, called____.
   A. Classes
   B. Functions
   C. Tokens
   D. Objects
2. c = (n) ? a : b; can be rewritten as
   A.if(n){c = a;}else{c = b;}
   B.if(!n){c = a;}else{c = b;}
   C.if(n){c = b;}else{c = a;}
   D.if(n){c = a}else{c = b}
3. What is the correct definition of an array?
   A. An array is a series of elements of the same type in contiguous locations
   B.An array is a series of element
   C.An array is a series of elements of the same type placed in non-contiguous memory locations
   D.An array is an element of the different type
4. In which part of the for loop termination condition is checked?
   for(I;II;III)
   { IV }
   A. I
   B. II
   C. III
   D. IV
5. Which of the following is a complete function?
   A. intfunct();
   B. intfunct(int x) { return x=x+1; }
   C. void funct(int) { printf(“Hello"); }
   D. void funct(x) { printf(“Hello"); }
6. How do structures and classes in C++ differ?
   A.In Structures, members are public by default whereas, in

Classes, they are private by default

B. In Structures, members are private by default whereas, in Classes, they are public by default

C. Structures by default hide every member whereas classes do not

D. Structures cannot have private members whereas classes can have

7. Which of the following cannot be a structure member?

A. Another structure

B. Function

C. Array

D. Pointer

8. Which Feature of OOP illustrated the code reusability?

A. Polymorphism

B. Abstraction

C. Encapsulation

D. Inheritance

9. In case of inheritance where both base and derived class are having constructors, when an object of derived class is created then _____.

A. constructor of derived class will be invoked first

B. constructor of base class will be invoked first

C. constructor of derived class will be executed first followed by base class.

D. constructor of base class will be executed first followed by derived class.

10. When a base class is privately inherited by the derived class, then _____ .

A. Protected members of the base class become private members of derived class

B. Public members of the base class become private members of derived class

C. Both a and b

D. Only b

11. A step by step instruction used to solve a problem is known as ____.

12. The process of drawing a flowchart for an algorithm is called _____.

13. _____ is an exit-controlled loop.

14. _____ are control structures for C program.

15. Size of a union is determined by size of the _____.

16. _____ types of data allowed inside a structure.

17. _____many classes can be defined in a single program.

18. In CPP, the keyword used to declare a class is _____.
19. The_____ inherits some or all of the properties of the _____class.
20. The member functions of a derived class can directly access only the _____ data.

SECTION – B

Answer any **FOUR** questions **4 x 8 = 32 M**

21. Describe the structure of C program with an example
22. Write a C program for matrix addition and subtraction.
23. Difference between structure and union.
24. Demonstrate friend functions in cpp
25. Illustrate the concept of access modifiers
26. Write a C program to check whether a given number is prime or not.

SECTION – C

Answer any **FOUR** questions **4 x 12 = 48 M**

27. Explain in detail about Operators in C language?
28. Explain Branching and looping statements in C.
29. Write a C program to store and print the roll no, name, age, address and marks of 15
30. Define constructor and explain the types with example.
31. Create an example to demonstrate multiple and hierarchal inheritance
32. Explain String Manipulation functions with example?