

**GOVT.CITY COLLEGE, HYDERABAD**

(Autonomous)

Syllabus for Computer Science

**BA(CA) Programme under Choice Based Credit System(2017-18)****SEMESTER-I**

Course Code	Course Title	Course Type	Hours/Week	Credits
106	Programming in C	DSC-3A	4T+2P=6	4 +1=5

**SEMESTER-II**

Course Code	Course Title	Course Type	Hours/Week	Credits
206	Programming in C++	DSC-3B	4T+2P=6	4 + 1 =5

**SEMESTER-III**

Course Code	Course Title	Course Type	Hours/Week	Credits
301	A: SciLab - 1	SEC-1	2	2
	B: Pyrthon-1			
306	Data Structures	DSC-3C	4T+2P=6	4 + 1 =5

**SEMESTER-IV**

Course Code	Course Title	Course Type	Hours/Week	Credits
401	C: SciLab - 2	SEC-2	2	2
	D: Pyjthon-2			
406	Computer Networks	DSC-3D	4T+2P=6	4 + 1 =5

**Semester -V &VI**

Course Code		Course Title	Hours/week	Marks	Credits
501	Semester-V	Java Programming-I	04	100	03
502	Semester-V	Web Technology-I	03	100	02
601	Semester-VI	Java Programming-II	04	100	03
602	Semester-VI	Web Technology-II	03	100	02
	Practical-3	JAVA programming	02	100	02
	Practical-4	Web Applications	02	100	02
	TOTAL CREDITS				<b>30</b>
	Project Work	On the given topic		100	02
	* One Elective only is compulsory in respective Semester				

**GOVT.CITY COLLEGE, HYDERABAD**  
**(Autonomous)**  
**B.A(Computer Applications)**  
**Semester-I**

**DSC-3A**

**Programming in C**

106

Theory: 4 credits and Practical: 1 credit

Theory: 4 Hours/Week and Practical: 2 Hours/Week

**Unit - I**

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU. Program fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.

Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.

Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation-precedence and associativity, Type Conversions.

**Unit - II**

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences, Control Statements: Selection Statements - if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements - while, for, do-while; Special Control Statement - goto, break, continue, return, exit.

Arrays and Strings: One and Two Dimensional Arrays, Character Arrays, Functions from ctype.h, string.h.

**Unit - III**

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Scope of Variables, Storage Classes, Inline Functions, and Recursion.

Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Dynamic Memory Allocation.

**Unit - IV**

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union),

Accessing members of a Structure (Union), Structures Vs Unions, Enumeration Types.

Files: Introduction, Using Files, Working with Text Files and Binary Files, Other File Management Functions.

Text Pradip Dey, Manas Ghosh, Computer Fundamentals and Programming in C (2e)

References

1. Ivor Horton, Beginning C
2. Herbert Schildt, The Complete Reference C
3. Paul Deitel, Harvey Deitel, C How To Program
4. Byron S. Gottfried, Theory and Problems of Programming with C
5. Brian W. Kernighan, Dennis M. Ritchie, The C Programming Language
6. B. A. Forouzan, R. F. Gilberg, A Structured Programming Approach Using C

Practical: 2 Hours/Week Credit: 1

1. Write a program to find the largest two numbers using if and conditional operator.
2. Write a program to calculate arithmetic operations of two numbers using switch.
3. Write a program to print the reverse of a given number.
4. Write a program to print whether the given number is a prime or not.
5. Write a program to find largest and smallest elements in a given list of numbers.
6. Write a program to find the sum of two matrices.
7. Write a program to find the product of two matrices.
8. Write a program to print the reverse of a given string.
9. Write a program to find the factorial of a positive integer using iteration and recursion.
10. Write a program to find the GCD of two positive integers using iteration and recursion.
11. Write a program to demonstrate the call by value and the call by reference concepts.
12. Write a program to illustrate the use of Enumeration data type.
13. Write a program to illustrate the use of structure concept.
14. Write a program to illustrate the use of union concept.
15. Write a program to write content into a file and display contents of a file
16. Write a program to copy content of one file into another file and display the content of new file.

**GOVT.CITY COLLEGE, HYDERABAD**  
**(Autonomous)**  
**B.A.(Computer Applications)**  
**Semester-II**

**DSC-3B**

**Programming in C++**

206

Theory: 4 credits and Practical: 1 credit

Theory: 4 Hours/Week and Practical: 2 Hours/Week

**Unit - I**

Introduction to C++: Applications, Example Programs, Tokens, Data Types, Variables, Operators, Expressions, Control Structures, Arrays, Strings, Pointers.

Functions: Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions.

**Unit - II**

Object Oriented Programming: Procedural Programming Vs Object-Oriented Programming, Terminology, Benefits, Languages, and Applications.

Classes: Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Instance and Static Members, Friends of Classes, Memberwise Assignment, Copy Constructors, Operator Overloading.

**Unit - III**

Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance.

C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

**Unit - IV**

Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception.

Templates: Function Templates-Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates - Introduction, Defining Objects of the Class Template, Class Templates and Inheritance.

Text Tony Gaddis, Starting out with C++: from control structures through objects (7e)

## References

1. B. Lippman, C++ Primer
2. Bruce Eckel, Thinking in C++
3. K.R. Venugopal, Mastering C++
4. Herbert Schildt, C++: The Complete Reference
5. Bjarne Stroustrup, The C++ Programming Language
6. Sourav Sahay, Object Oriented Programming with C++

Practical: 2 Hours/Week Credit: 1

1. Write a program to print the sum of digits of a given number
2. Write a program to check whether the given number is Armstrong or not
3. Write a program to check whether the given string is Palindrome or not
4. Write a program to read the student name, roll no, marks and display the same using class and object.
5. Write a program to find area of a rectangle, circle, and square using class and object.
6. Write a program to implement inline function inside and outside of a class for
  - a. Finding the area of a square
  - b. Finding the area of a cube
7. Write a program to implement friend function and friend class
8. Write a program to implement constructor and destructor with in a class.
9. Write a program to demonstrate hierarchical inheritance.
10. Write a program to demonstrate multiple inheritances.
11. Write a program to demonstrate the constructor overloading.
12. Write a program to demonstrate static polymorphism.
13. Write a program to demonstrate dynamic polymorphism.
14. Write a program to implement polymorphism using pure virtual functions.
15. Write a program to demonstrate the function templates and class templates.
16. Write a program to demonstrate exception handling using try, catch, and finally.

GOVT.CITY COLLEGE, HYDERABAD  
(Autonomous)  
**B.A.(Computer Applications)**  
**Semester-V(Paper-V)**

**JAVA PROGRAMMING-I**

Hrs:(3T+2PR)

**UNIT-1:** Introduction to Java, language and Importance of Java on Internet. Java Buzz words, object oriented programming and Java Demo on sample program and compiling the program, Data Types.

**UNIT-2**Variables [Declaration Dynamic Initialisation and scope & lifetime] Type conversion, Arrays, operators [ Arithmetic, Relational Boolean] Java control statement Iteration statements, Iteration statements Jump statement Introduction to Classes and objects.

**UNIT-3**Introduction to methods and constructors Garbage Collection Introduction to Overloading. Overloading in detail, Introduction to inheritance, Inheritance in detail. Introduction to multiple hierarchy and in detail, Introduction to abstract classes in detail.

**UNIT-4**Packages and Inter faces :- Introduction to package and in detail, Access protection with examples, Important packages Interfaces: Defining and Implementing and with examples, exception Handling, Fundamentals, different types of exception handling use of Try, catch, throw, throws and finally.

Suggested Books:

Prescribed Books:

Programming with Java:E.Balagurusamy

Java Complete reference:

Reference Books:

Java 2.0:IvanBayross

Java Tutorial:Sun microsystems

Special edition using Java 2:JosephL.Weber



GOVT.CITY COLLEGE, HYDERABAD  
(Autonomous)  
**B.A.(Computer Applications)**  
**Semester-V(Paper-VII )**

**WEBTECHNOLOGIES-I**

Hrs:(3T+2PR)

**UNIT I** : Introduction to Internet basics, Client & Server technology Inter connectivity. Web client/ browser, available.

**UNIT II** : Introduction to HTML (Hypertext markup language), HTML commands, Titles & Footers, Text formatting, Text Styles, Lists, Text effect Adding Graphics to Html document, tables, Linking of documents, Frames some exercises.

**UNIT III** : Introduction to Java Script Java Script in Web pages, Advantages of Java Script, writing Java Script into HTML, Building Java Script syntax, Operators & Expressions in Java Script Java Script programming constructs

**UNIT IV**: Conditional checking statements, Loops & Functions in Java Script Dialog boxes some exercises.

Suggested Books:

Prescribed Books: HTML,DHTML,JAVASCRIPT,PERL,CGI:Ivon bayross

The complete reference Webdesign:Thomas A.Powel

Reference Books:Scripting Language and Webdesigning:R.singh,Mamatha varma.s.Mahindru  
World wide Web :Rick Stout

GOVT.CITY COLLEGE, HYDERABAD  
(Autonomous)  
**B.A.(Computer Applications)**  
**Semester-VI(Paper-VI )**

**JAVA PROGRAMMING-II**

**UNIT-1** : Built-in exception, I/P-O/P: I/O Basic reading console i/p & writing console o/p  
Reading and writing string Handling string constructor, spl. String operators character extraction  
string comparison searching and modifying strings Data conversion string buffer Applet basics  
architecture of applets

**UNIT-2** :Some simple applet display methods requesting repainting, using the status window  
understanding the HTML applet tags. Passing parameter to applet event model, event model, event  
classes, sources of events, event listener Interfaces, adapter classes and Inner classes.

**UNIT-3** :Introduction to AWT classes window fundamentals, frame windows, creating a frame  
window, creating windowed program and sizing graphics, color and use of font methics using  
AWT controls, lists and using buttons, check box group and using buttons, check box group and  
choice control using list and managing scroll bars, using text file and text area.

**UNIT-4** :Understanding layout Management: form layout , border layout, Menus and aialog  
boxes, files dialog and exploring the controls, Menus and layout manager.

Suggested Books:

Prescribed Books:

Programming with Java:E.Balagurusamy

Java Complete reference:

Reference Books:

Java 2.0:IvanBayross

Java Tutorial:Sun microsystems

Special edition using Java 2:JosephL.Weber

GOVT.CITY COLLEGE, HYDERABAD  
(Autonomous)  
**B.A.(Computer Applications)**  
**Semester-VI(Paper-VIII )**

**WEB PROGRAMMING-II**

**UNIT-I:**

Introduction to CGI (Common Gateway Interface) why is CGI used working of CGI small exercises on CGI.

**UNIT-II :**

Introduction to Perl – Per basics, Perl string need for data storage, Arrays, Indexed Arrays & Hashed Arrays, Environment variables some exercises, Operators

**UNIT-III :**

Comparing program flow in Perl using UNLESS statement. Perl Functions-String functions, Concatenating strings, Repeating strings

**UNIT -IV:**

File handling, opening & closing of files. Database Connectivity -ODBC object methods.

**Suggested Books:**

Prescribed Books: HTML,DHTML,JAVASCRIPT,PERL,CGI:Ivon bayross

The complete reference Webdesign:Thomas A.Powel

Reference Books:Scripting Language and Webdesigning:R.singh,Mamatha varma.s.Mahindru

World wide Web :Rick Stout

# GOVT. CITY COLLEGE, HYDERABAD.

(Autonomous)

Department of Computer Applications

## Panel of Examiners

### B.A. (E P CA) Computer Application Papers

S.No	Name & Details	Paper	Contact Number
1.	<b>Smt K.L.Madhuri</b> N.B.Science College	<b>Programming in C</b> <b>Programming in C++</b> <b>Data Structures</b> <b>Java Programming</b> <b>Computer Networks</b>	M:9849210254 Off: 24520659
2.	<b>Smt. Anantha Lakshmi</b> St. Joseph Degree College. King Koti	<b>Programming in C</b> <b>Programming in C++</b>	M: 9704694939
3.	<b>Smt T.S.Savitha</b> Koti Womens College	<b>Data Structures</b> <b>Computer Networks</b> <b>Web Programming</b>	M: 9985114077
4.	<b>Sri G. Bhasker</b> Nrupatunga Degree College, Kachiguda	<b>Programming in C</b> <b>Programming in C++</b> <b>Web Programming</b> <b>Computer Networks</b>	M9849590575

Signature of	1.	2.
B O S Members:	3.	4.

# GOVERNMENT CITY COLLEGE, HYDERABAD

(Autonomous)

BA(Computer Applications)

Semester: I to IV Semesters

Model Question Paper

**Time: 3 Hrs**

**Max. Marks: 80**

## Section-A

**Short answer questions**

**Answer any five questions**

**5x4=20M**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Note: Two questions from each unit

## Section-B

**Long answer questions**

**4x15=60**

9. (A) Or (B)
10. (A) Or (B)
11. (A) Or (B)
12. (A) Or (B)

# GOVERNMENT CITY COLLEGE, HYDERABAD

(Autonomous)

BA(Computer Applications)

Semester: V and VI Semesters

Model Question Paper

Time: 2 1/2Hrs

Max. Marks: 75

## Section-A

Answer the following (5 Questions)

5x2=10

- 1.
- 2.
- 3.
- 4.
- 5.

## Section-B

II. Answer any 7 of the following

7x5=35

- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.

## Section-C

III. Answer the following

3x10=30

- |     |    |     |
|-----|----|-----|
| 15. | OR | 16. |
| 17. | OR | 18. |
| 19. | OR | 20. |