KENDRIAYA VIDYALAYA SANGATHAN, PATNA REGION
Split up Syllabus (Session- 2017-18)

COMPUTER SCIENCE (083)
CLASS XI

Unit No.	Unit Name	Marks
1	COMPUTER FUNDAMENTALS	10
2	PROGRAMMING METHODOLOGY	12
3	INTRODUCTION TO C++	14
4	PROGRAMMING IN C++	34
	Total	70

month	Contents	No. of periods Theory	No. of periods Practical	Practicals
June	**UNIT 1: COMPUTER FUNDAMENTALS** Evolution of computers; Basics of computer and its operation: Functional Components and their inter-connections, concept of Booting.Generations of Modern Computer. Types of Computer.	**8 periods**	**4 periods**	
July	**Software Concepts:** **Types of Software** - System Software, Utility Software and Application Software; **System Software**: Operating System, Compilers, Interpreters and Assembler; **Operating System**: Need for operating system, Functions of Operating System (Processor Management, Memory Management, File Management and Device Management), Types of Operating system – Interactive (GUI based), Time Sharing, Real Time and Distributed; Commonly used operating systems: Solaris, UNIX,LINUX, Mac OS, MS Windows; Mobile OS- Android, Symbian. **Number System:** Binary, Octal, Decimal, Hexadecimal and conversion amongst these number system. **Internal Storage encoding of characters:** ASCII, ISCII (Indian Script standard code for Information Interchange), and UNICODE(for Multilingual Computing). **Microprocessor:** **Basic** concepts, clock speed(MHz, Ghz), 16 bit,	**20 periods**	**16 periods**	

	Processors(Reduced Instruction Set Computing) and EPIC(Explicitly Parallel Instruction Computing).
	
	Memory Concepts:
	    Units: Byte, KB, MB, Gb, TB, PB, EB, ZB, YB.
	Primary Memory: Cache, RAM, ROM.
	    Secondary Memory:
	Fixed and Removal Storage HDD,CD,DVD etc.
	Input/Output Port/ Connection:
	    Serial, Parallel and Universal Serial Bus, PS-2 port, Infrared port, Bluetooth, Firewire.			

August	**PERIODIC TEST -I**			

August	**UNIT 2: PROGRAMMING METHODOLOGY**
	    General Concepts; Modular approach; Clarity and Simplicity of Expressions, Use of proper Names for identifiers, Comments, Indentation; Documentation and Program Maintenance; Running and Debugging programs, Syntax Errors, Run-Time Errors, Logical Errors;
	    Problem Solving Methodology and Techniques: Understanding of the problem, Identifying minimum number of inputs required for output, Step by step solution for the problem, breaking down solution into simple steps, Identification of arithmetic and logical operations required for solution, Using Control Structure: Conditional control and looping (finite and infinite);
	
	 UNIT 3: INTRODUCTION TO C++
	Programming by Example In C++ Language :
	    C++ character set, C++ Tokens (Identifiers, Keywords, Constants, Operators), Structure of a C++ Program (include files, main function); Header files – iostream.h, iomanip.h; **cout**, **cin**; Use of I/O operators (<< and >>), Use of endl and setw(), Cascading of I/O operators, Error Messages; Use of editor, basic commands of editor, compilation, linking and execution; standard input/output operations from C language: gets(), puts() of stdio.h header file;
	
	Data Types, Variables and Constants:
	    Concept of Data types; Built-in Data types: **char**, **int**, **float** and **double**; Constants: Integer Constants, Character Constants (Backslash character constants - \n, \t), Floating Point Constants, String Constants; Access modifier: **const**; Variables of built-in data types,
		20 periods	**16 periods**	**Program on basic syntax of C++ e.g. display message.**
				
				Simple Program based on the data type , character constant and use of different type of operators in C++ for beginner

September	**Operators and Expressions:** Operators: Arithmetic operators (-,+,*,/,%), Unary operator (-), Increment and Decrement Operators (—,++), Relational operators (>,>=,<,<=,==,!=), Logical operators (!, &&, ‖), Conditional operator: <condition>?<if true>:<else>; Precedence of Operators; Expressions; Automatic type conversion in expressions, Type casting; C++ shorthand's (+=, -=, *=, /=, %=); **UNIT 4 : PROGRAMMING IN C++** **Flow of control:** **Conditional statements: if-else**, Nested **if**, **switch..case..default**, Nested **switch..case**, break statement (to be used in switch..case only); **Loops: while**, **do - while** , **for** and Nested loops;	**20 periods**	**16 Periods**	**Programming based on if else, nested if, all three types of loop, nested loop and switch case statements.**
	Half Yearly Exam			
October	**String Functions**: **Header File:** string.h **Functions:** isalnum(), isalpha(), isdigit(), islower(), isupper(), tolower(), toupper(); **Character Functions:** **Header File**: ctype.h **Functions:** isalnum(), isalpha(), isdigit(), islower(), isupper(), tolower(), toupper(), strcpy(), strcat(), strlen(), strcmp(), strcmpi(); **Mathematical Functions:** **Header File**: math.h, stdlib.h; **Functions**: fabs(), log(), log10(), pow(), sqrt(), sin(), cos(), abs(), **Other Functions:** **Header File**: stdlib.h; **Functions:** randomize(), random()			**Prog. On string e.g. length finding, concating of two string, reverse of string, string comparision, change case.**
November	**UNIT 4: PROGRAMMING IN C++ (Continued)** **Structured Data Type: Array** Declaratrion/initialisation of One-dimensional array, Inputting array elements, Accessing array elements, Manipulation of Array elements (sum of elements, product of elements, average of elements, linear search, finding maximum/minimum value); Declaration/Initialization of a String, string manipulations (counting vowels/consonants/digits/ special characters, case conversion, reversing a string, reversing each word of a string);	**20 periods**	**16 periods**	**Programming based on single dimension array like linear search, avg. of marks, sum and product of elements etc.**

December	Two-dimensional Array: Declaration/initialisation of a two-dimensional array, inputting array elements Accessing array elements, Manipulation of Array elements (sum of row element, column elements, diagonal elements, finding maximum/minimum values); User Defined Functions: Defining a function; function prototype, Invoking/calling a function, passing arguments to function, specifying argument data types, default argument, constant argument, call by value, call by reference, returning values from a function, calling functions with arrays, scope rules of functions and variables; local and global variables;	10 periods	8 periods	Prog. Based on two dim. Array like sum/ subtraction multiplication and transpose of matrix, sorting of any array etc. All the prog. through function.
January	**PERIODIC TEST –II**			
January	STRUCTURES Introduction Referencing structure Elements Nested structure Structure and Array USER DEFINED Data type #Define Preprocessor directives.	15 periods	12 periods	Database of students. Marksheet creation, display on the basis of per.
February	Revision	15 periods	12 periods	

S.No	Name of examination	Marks	Weightage (in %)	Month of Exam	Remarks
1	Periodic Test -01	50	10	August	
2	Half Yearly Exam	70 (theory) + 30 (Practical)	30	October	
3	Periodic Test -02	50	10	January	
4	Session Ending Examination	70 (theory) + 30 (Practical)	50	March	
Separately Pass in Theory and Practical Paper And Minimum Pass Marks is 33 % of Total Marks					

BLUE PRINT FOR **PERIODIC TEST-I**

SUBJECT -Comp. Sc.   M.M-50
CLASS-XI SC   TIME-90 MINUTES

UNIT	CHAPTER	VSA 1 Marks	SA-I 2 Marks	SA-II 3 Marks	LA 4 Marks	TOTAL
UNIT-I	Ch -1 Computer Overview	1(2)	2(5)	3(2)		18
	Ch-2 Working with Operating System	1(2)	2(3)	3(2)	4(1)	18
	Ch -3 Data Representation	-	2(7)	-	-	14
	Total	1(4)	2(15)	3(4)	4(1)	50(24)

BLUE PRINT FOR **HALF YEARLY**
SUBJECT - Comp. Sc.   M.M-70
CLASS-XI SC   TIME-3 HOURS

UNIT	CHAPTER	VSA 1	SA-I 2	SA-II 3	LA 4	TOTAL
UNIT-I	CH-1 to 4	1(2)	2(4)	-	-	10
UNIT-II	CH-5, CH-14	-	2(3)	3(2)		12
UNIT- III	CH-6 to 9	1(1)	2(6)	3(3)	4(3)	34
UNIT- IV	CH-10 & Predefined Library Function		2(2)	3(2)	4(1)	14
	TOTAL	1(3)	2(15)	3(7)	4(4)	70(29)

BLUE PRINT FOR **PERIODIC TEST-II**
SUBJECT -Comp. Sc.M.M-50
CLASS-XI SCTIME-90 MINUTES

UNIT	CHAPTER	VSA 1	SA-I 2	SA-II 3	LA 4	TOTAL
UNIT-IV	CH-11	1(1)	2(5)	3(2)	4(2)	25
	CH-12	1(1)	2(5)	3(2)	4(2)	25
	TOTAL	1(2)	2(10)	3(4)	4(4)	50 (20)

SESSION ENDING EXAMINATION - 2018
Class- XI Comp. Sc.

TIME- 3 HRS.   M.M-70
BLUE PRINT

	VSA	SA-I	SA-II	LA	TOTAL
UNIT – 1	1(2)	2(4)	-	-	10
UNIT –II	-	2(3)	3(2)	-	12
UNIT-III	-	2(4)	3(2)		14
UNIT–IV	1(2)	2(5)	3(2)	4(4)	34
Total	1(4)	2(16)	3(6)	4(4)	70(30)