COMPUTER SCIENCE/COMPUTER APPLICATION/ INFORMATION TECHNOLOGY

The examination in Computer Science/Computer Application /Information Technology will comprise one theory paper and practical examination for each semester. The theory paper will be of 3 hour duration and carry 80 marks. The Practical examination will be of 4 Hrs. duration and carry 50 marks.

The distribution of marks in practical examination will be as follows :

1. Programm writing/execution (on group A & B) 30 Marks
2. Practical Record 10 Marks
3. Viva-Voce 10 Marks

Total : 50 Marks

3S - COMPUTER SCIENCE/COMPUTER APPLICATION / INFORMATION TECHNOLOGY

Object-Oriented Programming with C++ and Web Technology.

Unit-I : Concept of OOP, Comparison with POP, features of OOP, advantages and applications of OOP, Introduction to C++, structure of C++ program, tokens, keywords, identifiers, basic data types & user defined data types, Constants, variables, declaration of variables, dynamic initialization of variables, types of symbolic constants.

Unit-II : Operators : Scope resolution operator, member dereferencing operator, implicit & explicit conversions. Control structures : if, switch, do..while, while, for statements Functions: Function prototype, Function calling and returning, their types, inline functions, default arguments, constant arguments, function overloading.

Unit-III : Classes and objects : Data abstraction and, Encapsulation, Data Hiding, class specification, defining objects, accessing class member, defining member functions, Nesting of

member function, friend functions, passing objects as arguments, Returning objects from functions. Constructors: Defining constructor, parameterized constructor, multiple constructors in a class, constructor with default argument, copy constructor, destructor.

Unit-IV : Basic elements of communication system, Network concept, advantages, goals, network topologies : Star, ring, completely connected N/W, Hybrid N/W, multipoint n/w, LAN, WAN, OSI model.

Unit-V : HTML : Introduction, Need of HTML application of HTML, Basic structure of HTML, HTML tags and attributes : Adding tags, include attributes < HTML >, < HEAD >, < TITLE >, < BODY >, < P >, < Br >, < HR >, Heading tags, table tags,<LINK>, < IMG>, <ROWSPAN>, <COLSPAN>, < MARQUEE>,<BLOCKQUOTE >, <A >, < I >, < B >, list tag, Attributes : align, background colour, text color.

Unit-VI : Style sheet : advantages of style sheet & applications of style sheet, CSS : Introduction, CSS style sheet properties : Units, classes and ID attributes. Properties: Text, font, colour, background, border, display, height, line, margin, width, CSS with HTML.

Book recommended :

1) Object Oriented Programming with C++ : E Balgurusamy TMH.
2) Mastering C++ : K.R. Venugopalan
3) Programming with C++ : Robert Lafore
4) Programming with C++ : R.S. Nisar Ali
5) Computer Fundamental and Networking : P.K. Sinha
6) Local Area Network : Keiser, TMH, Publication
7) Computer Networks : Andrew S. Tanenbaum, PHI.
8) HTML in 21 days : Tech media publication
9) HTML4 for dummies Mastering by Ed Tittel, IDG Publications.
10) HTML4 Unleashed, Professional Reference Edition by Rick Darnell
11) C++ for beginners : by B.M. Harwani, SPD Publications

Practicals : Minimum 16 practicals based on

A. Unit - I, II, III (Minimum 8 practicals)

B. Unit - IV, V, VI (Minimum 8 practicals)

4S : COMPUTER SCIENCE / COMPUTER APPLICATION / INFORMATION TECHNOLOGY

Advanced C++ and Web Designing

Unit I : Arrays and Pointers : one-dimentional, two-dimentional arrays, Defining Pointers, arrays of objects, Pointer to objects, this pointer operator overloading : Defining operator overloading, overloading arrays, Binary, and assignment operators, rules for overloading operators

Unit-II : Inheritance : Introduction, derived classes, Single inheritance, multiple inheritance, Hierarchical and Hybrid inheritance. Templates : Function, class, members and Function templets.

Unit-III : Virtual Functions and Polymorphism :- Introduction, Pointers to derived class, dynamic binding, definition of Virtual Function, pure Virtual Functions, Rules For Virtual Functions. Working with Files : Introduction, Hierarchy of File Stream Classes, opening and closing of Files, File modes, File pointers and their manipulations, File Input/Output with Fstream class.

Unit-IV : Introduction to XML : History of Markup languages,features of XML, Simple XML document, logical structure of XML elements, Components of XML documents : The document prolog and document instance. CSS with XML.

Unit-V : Document type Defination (DTD): Introduction, need of DTD, declaring elements, element content models, declaring attributes, attribute types : internal and external DTD, entities and their types.

Unit-VI : XML Schemas : Introduction, features, Comparison with DTD, Schema elements, element type element attributes, XML schema data types, converting DTD to schema,Namespaces : Introduction, declaration, default &
prefit namespaces, scope of namespaces collusion &Applications.

Books Recommended :-

1. Object Oriented Programming with C++ : E Balguruswamy- THM
2. Mastering C++ : K.R. Venugopalan
3. Programming with C++ : R.S. Nisar Ali
4. Mastering XML, Ann Navaro, Chuck White, Linda Burman, BPB
Publication.
5. Applied XML Solutions, BPB Publications.
6. Inside XML, BPB Publication
7. Essential XML. Box
8. XML and Related Technology, Kahate
9. XML How to Program Deitel.

Practicals :-

Group A : Minimum 08 practicals based on Unit I to III.
Group B : Minimum 08 practicals based on Unit IV to VI