W.E.F. SESSION 2011-2012

Course: B.Sc. (Hons.) Information Technology

Paper No	Nomenclature of the Paper	Max Marks		Pass Marks	Exam Duration
		External	Internal		
Semester V					
BSIT -501	Computer System Architecture-I(Th)	45	5	20	3hrs
BSIT -502	Programming In C++ - I (Th)	45	5	20	3hrs
BSIT -503	Web-Site Design Implementing Basic Design Tools-I (Th)	45	5	20	3hrs
BSIT -504	Internet Concepts & Applications-I (Th)	45	5	20	3hrs
BSIT -505	Microprocessor Architecture and Programming-III(Th)	45	5	20	3hrs
Semester VI					
BSIT -601	Computer System Architecture-II(Th)	45	5	20	3hrs
BSIT -602	Programming In C++ - II(Th)	45	5	20	3hrs
BSIT-603	Web-Site Design Implementing Basic Design Tools-II(Th)	45	5	20	3hrs
BSIT-604	Internet Concepts & Applications –II (Th)	45	5	20	3hrs
BSIT-605	Embedded Systems & 8051 Microcontroller(Th)	45	5	20	3hrs
BSIT-606	Programming In C++ (IT Lab IX)	50		20	3hrs
BSIT-607	Internet Concepts & Applications (IT Lab X)	50		20	3hrs
BSIT-608	Project (IT Lab XI)	100		40	3hrs

Examination Scheme for Semester V & VI

I. Theory Papers(Semester System of Examination)

1. Syllabus in each Theory Paper is divided in 4 units.
   i. A Student is required to attempt 5 questions in all.
   ii. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
   iii. Two questions will be set from each unit. A student is required to attempt one question from each unit.
   iv. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks in all theory papers:

Paper (BSIT -501, 502,503, 504, 505) –45+5* = 50 marks of 3 hours duration.

Paper (BSIT -601, 602,603, 604, 605) –45+5* = 50 marks of 3 hours duration.

* For each paper question paper will be of 45 marks and 5 marks in each theory paper are awarded through internal assessment in each semester.

II. Practical Paper BSIT-606,BSIT-607,BSIT-608 (Annual Examination System)

i) The Practical classes will be held during both V & VI semesters; however, the Practical examination will be held at the end of 6th semester in one sitting of three hours each practical paper.

ii) A candidate is required to perform 1 experiment out of the list provided during course of study in Semester V and Semester VI .

iii) Distribution of Marks for Paper BSIT-606 & BSIT-607 :

50 Marks of 3 Hours duration for each practical paper
Lab Record: 10
Experiments: 20
Viva/Voce : 20

iv) Distribution of Marks for Paper BSIT-608

100 Marks of 3 Hours duration
Project File: 25
Demonstration: 50
Viva/Voce : 25

Semester-V
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 501
Nomenclature: - Computer System Architecture-I

Max. Marks: 45+5*
Time: 3hrs.

UNIT -I

Basic Computer Organisation and Design: Instruction Codes, Computer registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory reference instructions, Input-Output and Interrupt, Design of Basic computer, Design of accumulator logic

UNIT -II

Register Transfer and Microoperations: Register Transfer Language (RTL), register transfer, Bus and Memory Transfers, Arithmetic Microoperations, Logic Microoperations, Shift Microoperations, Arithmetic Logic Shift Unit

UNIT -III

Microprogrammed Control: Control memory; address sequencing, microprogram sequencer, Design of Control Unit

UNIT -IV

Central Processing Unit: General registers Organization, Stack Organization, Instruction formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Program Interrupt, Reduced Instruction Set Computer (RISC), CISC characteristics.

References : 1. Computer System Architecture By. Moris Mano
2. Computer Architecture and Organization By J.P. Hayes

Semester-V
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 502
Nomenclature: - Programming In C++ - I

Max.Marks:45+5*

Time :3 hrs

UNIT –I

Concepts of OOPS , Structure of C++, C++ data types, pointer, constant reference, enumeration, operators (arithmetic, relational, logical and bitwise) and their precedence, Control flow statements.

UNIT –II

Array ,Strings, Structures ,Union and Pointers

UNIT –III

Functions, scope and the free store allocation, recursion, in line functions, argument passing, reference and array argument, overloaded function names, template functions, pointer to function, type –safe linkage.

UNIT –IV

Class definition, class objects, member functions, implicit this pointer, static class members, class scope, constructors and destructors.

References:

1. C++ the complete reference – Strou Strup (Adison Wesley)
2. Let us C++ - Kanetkar (BPB)
3. C++ program design – James Cohoon, Jack Davidson (TMH)
4. Object oriented programming with C++ - Balagurusamy (TMH)

Semester-V
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 503
Nomenclature of paper : Web-Site Design Implementing Basic Design Tools-I

Max.Marks:45+5*

Time :3 hrs

Unit- I

HTML : Introduction ,basic structure elements, Categories of body elements (study atleast one example), To view pages in browsers and HTML source, Nesting rules, beautification of documents using tags,Changing color schemes and fonts(study at least one example)

Unit -II

Classify HTML document,various headsection elements, specifying language information ,Lang attribute, Block level elements,Text level elements, Front style elements, Phrase elements, Ins & Del elements

Unit -III

External Link attributes(HREF,Anchor text,title,name,target),Internal Link using URLs (absolute & relative),default pages,jump to Named Anchor with Internal Link ,Verifying and maintaining tools.

Unit- IV

Understanding Table, Table model for HTML 4.0(elements & attributes).

Reference:

1. HTML 4.0 by E.Stephen Mack & Janen Platt
2. HTML Example book by Farrar & Smith (BPB)
3. The Complete Reference HTML by Thomas A. Powell (TMH)
4. Multimedia : on the web by MC Gloughilin (PHI)

Semester-V
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 504
Nomenclature of Paper : INTERNET CONCEPTS & APPLICATIONS-I

Max.Marks:45+5*

Time :3 hrs

UNIT-I

Need of information, Internet construction concepts , e-mail concepts , e- mail tasks, e- mail attachments, mailing lists, filtering e- mails , controlling e-mail spam.

UNIT-II

Protocol, File transfer concepts, filer transfer protocol [FTP] programmes,TCP/IP FAQs, remote login [telnet], network news.

UNIT-III

World wide web concepts , search engines and web directories[basic idea] , web resources, applications [in brief]

UNIT-IV

Types of Internet Connection –Dial Up Connection, ISDN,DSL, Cable TV Internet Connection, Satellite Internet Connection,Wireless Internet Connection.

References:

1. The Complete Reference: Internet , Millennium Edition- Margret Levine Young

2. The Internet Book – Douglas E. Corner [PHI]

Semester-V
Course: B.Sc (Hons.)IT
Paper Code: BSIT 505
Nomenclature: - Microprocessor Architecture and Programming-III

Max. Marks: 45+5*
Time: 3hrs.

UNIT-I
Introduction to stack, stack structure of 8086, interrupts and interrupts service routines, interrupt cycle of8086, non maskable interrupt, maskable interrupt (INTR), interrupt programming, passing parameters to procedures, handling programs of size more than 64K, MACROS, timings and delays.

UNIT-II
Basic Peripherals and their Interfacing with 8086: semiconductor memory interfacing, dynamic RAM interfacing, interfacing I/O ports.

UNIT-III
Interfacing A/D data converters, interfacing D/A converters, Interconnection topologies, software aspects of multimicroprocessor systems, Numeric Processor 8087,

UNIT-IV
Salient features 80286, 80386, 80586, Pentium 4, Basic features of RISC Processsors and Design issues of RISC Processors.

References:
1. Advanced Microprocessors & Peripherals By Ray & Bhurchandi (Tata McGraw Hill)
2. Microprocessors and Interfacing (Programming and Hardware) by Douglas V. Hall.
3. Advance Microprocessors & IBM-PC Assembly language Programs By Udaya Kumar
4. Microprocessors Principles and Application 2nd edition By Gilmore

Semester-VI
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 601
Nomenclature: - Computer System Architecture-II

Max. Marks: 45+5*
Time: 3hrs.

Unit –I

Pipeline and Vector processing: Parallel Processing, pipelining, Instruction Pipeline, Risc Pipeline , Vector Processing .

Unit-II

Memory Organization: Memory hierarchy, Auxiliary Memory, Associative Memory, Interleaved memory, Cache memory, Virtual Memory, Memory Management Hardware.

Unit-III

Multiprocessors : Characteristics of Multiprocessors, Interconnection Structures.

Unit-IV

Input Output Organization : Peripheral devices , Inut-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt, Direct Memory Access(DMA),Input-Output Processor(IOP),Serial Communication

References:

1. Computer System Architecture — By. Moris Mano
2. Computer Architecture and Organization — By J.P. Hayes

Semester-VI
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 602
Nomenclature: - Programming In C++ - II

Max.Marks:45+5*

Time :3 hrs

UNIT-I

Friend functions. Friends to a class, Operator overloading .

UNIT-II

Class derivation and inheritance, derivation specification, public , protected and private base classes, class scope under derivation, inheriting operator functions.

UNIT –III

Virtual functions, virtual base class, template class definition , instantiation and specialization: its static members)

UNIT-IV

File input and output, Stream Classes ,Exception handling , the catch handler, try block and throw clause, function throw list.

Refrences:

1. C++ the complete reference – Strou Strup (Adison Wesley)
2. Let us C++ - Kanetkar (BPB)
3. C++ program design – James Cohoon, Jack Davidson (TMH)
4. Object oriented programming with C++ - Balagurusamy (TMH)

Semester-VI
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 603
Nomenclature of paper : Web-Site Design Implementing Basic Design Tools-II

Max.Marks:45+5*

Time :3 hrs

UNIT-I

Under standing Frames ,Creating frameset documents,Nested FrameSet , In Line Frames Understanding Forms : Forms Attributes , Form Controls .

Unit-II

Multimedia : Image element attributes , Image as links , Image maps, Image files and formats,Audio & Video formats(a brief introduction), adding multimedia to webpages. Front page : Introduction, creating simple web pages

UNIT-III

Cascading Style Sheets , Inline Style, External Style, Embedded Styles , CSS Properties

UNIT-IV

Extensible Markup Language (XML): Introduction, features , XML support & usage , Structure of XML document, Structures in XML , Creating document type declarations, flow objects, working with text & font , color & background properties.

Reference:

1. HTML 4.0 by E.Stephen Mack & Janen Platt
2. HTML Example book by Farrar & Smith (BPB)
3. The Complete Reference HTML by Thomas A. Powell (TMH)
4. Multimedia : on the web by MC Gloughilin (PHI)
5. Internet & Web Technology by Raj Kamal (TMH)
6. Internet & Web Design ,ITLESL Research & Development Wing , Macmillian India
7. Multimedia & Web Technology by Ramesh Bangia (Firewall Media)

Semester-VI
Course. B.Sc. (Hons) IT
Paper Code: BSIT - 604
Nomenclature of Paper : INTERNET CONCEPTS & APPLICATIONS-II

Max.Marks:45+5*

Time :3 hrs

UNIT-I

Computer security [an introduction] cryptography, data encryption standards, definitions , breaches of security, security of measures. Classification of virus, prevention and cure, cookies[basic idea]

UNIT-II

Multimedia concepts , multimedia design considerations, performance and size, online chatting and conferencing concepts

UNIT-III

E- commerce: Meaning and Types , Evaluation , types of sites , selling via secure servers interacting with customers ,EDI, EFT .

UNIT-IV

Intranet, Intranet vs. Groupware, Intranet Hardware, Intranet Software, Intranet Services (Web (HTTP) Publishing,HTML,Hypertext),Communication Systems (Email, Fax), Software used in Electronic mail, Electronic Meeting Systems(Audio conferencing, Video Conferencing, Groupware), Extranet.

REFERENCES:

1. The Complete Reference: Internet , Millennium Edition- Margret Levine Young
2. The Internet Book – Douglas E. Corner [phi]
3. Multimedia On The Web- Stephen Mc Gloughlin [phi]
4. Learning Guide To Internet[PB. BPB]
5. Business On The Net- Mcmillan

Semester-VI
Course: B.Sc (Hons.)IT
Paper Code: BSIT 605
Nomenclature: - Embedded Systems & 8051 microcontroller

Max. Marks: 45+5*
Time: 3hrs.

UNIT-I

Embedded systems – introduction, role of processor and other hardware units, embedded systems on chip, Introduction to CISC and RISC architecture. Structural units of processor, processor selection for embedded system, memory devices for embedded systems

UNIT-II

Microcontrollers- survey, types, processor architecture, microcontroller memory types, microcontroller features, Microcontroller 8051 Architecture :Hardware, I/O pins, ports and circuits, external memory, counters and timers

UNIT-III

Serial data Input/output, Interrupts 8051 instruction set – data Move Instructions, Logical operations, Arithmetic operations, Jump and call Instructions

UNIT-IV

An 8051 Microcontroller design: Specifications, a microcontroller design, testing the design, timing subroutines, Lookup tables, Serial data transmission

References:

1. Embedded Systems Architecture, Programming and Design, by Raj Kamal, TMH, 2003.
2. The 8051 Microcontroller by Kenneth J. Ayala, Penram International.
3. Programming and Customizing 8051 Microcontroller by Myke Predko, Tata McGraw Hill.

.

Semester V & VI

Paper Code : BSIT-606

Nomenclature of paper : Programming In C++ (IT Lab IX)

Maximum Marks :50
Time : 3 Hrs

1. Program to study the behavior of data types i.e. their min. & max. values & their size.
2. Program that accepts a text from the keyboard and prints the no. of characters, vowels, words, lines.
3. program to determine whether the substring accurse within a string and other useful string operations
4. Program to implement a function to compare two arrays for equality. Be sure to define what it means for two arrays to be equal.
5. Program to add two integers of more tan 25 digits length.
6. Program to implement bubble and insertion sort algorithms.
7. program to implement a recursive function for implement quicksoft algorithm.
8. program to implement a Stack Class and define push and pop operations clarify the public and private members.
9. Program to implement a Queue Class and define insert and delete methods and necessary exception handling routines.
10. Implement a point as a base Class which defines a pixel in graphics Coordinate system. Derive Line and Circle classes from Point Class and define suitable method to draw them and make them invisible on the screen.
11. Redefine Point Class defied previously to include virtual functions. Inherit line, Circle, Rectangle, Ellipse classes. Through the help of virtual functions draw these entities and remove them from the screen.
12. Define a Node class to implement a linked list. The node carries the information of non-zero elements of a two-dimensional matrix. Define add delete methods to insert and remove elements from the linked list.

Semester V & VI

Paper Code: BSIT-607

Nomenclature of paper : INTERNET CONCEPTS & APPLICATIONS (IT Lab X)

Maximum Marks : 50

Time : 3 hours

I. Create, save and view a basic HTML page.
II. Use of body section tags in Web-page.
III. Use of head section elements and meta tags in web-page.
IV. Use of block-level elements.
V. Use of external and internal links in a Document.
VI. Use of colour and image tage for image insertion and background images and colours
VII. Incorporate multimedia (sound & video) elements in website/web-page.
VIII. Generation of table using HTML 4.0 table model.
IX. Create documents using frames with multiple views.
X. Setting-up of a dial-up Internet account and its testing.
XI. To send and to receive e-mails & files using various e-mails clients.
XII. Learn to set-up internet for use as :- (a) Chat Client (b) Intant Messenger.
XIII. Practice the use of at least two Web-browsers and to search internet using search-Engines.
XIV. To download & upload Software/fils from an FTP Server using GUI and CUI FTP clients.
XV. To connect with a remote machine using TELNET, to access information.
XVI. Creating Web Pages using XML.

Semester V & VI
Paper Code: BSIT-608
Nomenclature of paper :Project(IT Lab –XI)

Maximum Marks : 100

Time : 3 hours

PROJECT WORK AND VIVA-VOCE

Note:-

I. Three copies of nicely bound project reports should be submitted by each student.
II. A student can do his project work in any of the following programming languages/software package-C, C++,
Visual Basic , HTML etc.

Project Work (To be submitted by 31st March).

Each student shall be required to undertake a real life project problem during the final year of B. Sc. (IT) under the supervision of a faculty during the final year of Technology of the college concerned. The project work many be development assignment in a real environment.

Report-on Project work will consist of the following:

I. Index
II. A duly signed certificate from supervisor certifying that the candidate has done the project under his supervision and the work done in the project is the result of candidate's own effort.
III. A certificate from college principal certifying that the candidate is the student of this college and he has attended the college IT Labs for required no of days.
IV. Acknowledgement duly signed by student.
V. Introduction of Topic.
VI. Objective of the project.
VII. Definition of the problem.
VIII. Input design, output design, File design.
IX. System documentation and flowchart.
X. Listing of the software development along with sample inputs inputs and output.
XI. Conclusions.
XII. Advantages and disadvantages of the software developed.
XIII. Further scope of the project.
XIV. References.