FACULTY OF SCIENCE

SYLLABI

FOR

INFORMATION AND COMMUNICATION TECHNOLOGY
CERTIFICATE/ DIPLOMA (ADD-ON COURSE)

EXAMINATIONS 2016

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<table>
<thead>
<tr>
<th>Paper</th>
<th>Title</th>
<th>Lecture Per Week</th>
<th>Max. Marks</th>
<th>Exam Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Introduction to Information Technology</td>
<td>3</td>
<td>70</td>
<td>3</td>
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<tr>
<td>B</td>
<td>PC Software</td>
<td>3</td>
<td>70</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Practical Based on Paper A &amp; B</td>
<td>6</td>
<td>60</td>
<td>4</td>
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<tr>
<td>Paper</td>
<td>Title</td>
<td>Lectures Per Week</td>
<td>Max. Marks</td>
<td>Exam Duration</td>
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<tr>
<td>A</td>
<td>Introduction To Computer Network &amp; Internet Programming</td>
<td>3</td>
<td>70</td>
<td>3 hours</td>
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<tr>
<td>B</td>
<td>Programming Fundamentals Through “C” Language</td>
<td>3</td>
<td>70</td>
<td>3 hours</td>
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<tr>
<td>C</td>
<td>Practical Based On Paper A &amp; B</td>
<td>6</td>
<td>60</td>
<td>4 hours</td>
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</table>
A) INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of five sections: A, B, C, D and E. Section A, B, C and D will have two questions from the respective section of the syllabus and will carry 20% marks each. Section E will consist of 5-10 short-answer type questions, which will cover the entire syllabus uniformly and will carry 20% marks in all.

B) INSTRUCTIONS FOR THE CANDIDATES

1. Candidates are required to attempt one question each from the sections A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION-A

Computer Fundamentals: Historical evolution of computer, characteristics of computers capabilities and limitations of computers, Computer generations.

Types of Computers: Desktops, Laptops, Palmtop, PDA
Application of Computers: Computer and their impact on society, computer in education, commercial data processing, public utilities and computers in home.

SECTION-B

Block diagram of Computer identifying various components and their functions.
Primary Memory: concepts of RAM, ROM, EPROM etc.
Secondary Memory: Floppy disk, hard disk. DVD, compact disk (Read only, Write only, Rewritable CD’s)
I/P Devices: Keyboard, light pen, Mouse, joystick, trackball, scanner, barcode reader, data gloves, voice input systems.
O/P Devices: Types of printers like character, link page printers, impact and non impact printers, plotters, voice output systems.

SECTION-C

Number System: Non Positional and Positional number system, binary, octal, decimal hexadecimal number systems, arithmetic (addition, subtraction, multiplication and division) in different number systems, base conversion between two different number systems Binary Arithmetic and Boolean algebra.
Binary Codes: BCD, ASCII, EBCDIC codes.

SECTION-D

Introduction to operating system: Definition, need of system, operating system services, functions of operating systems as resource manager.
Types of operating systems: Simple batch systems, multi-programmed systems, time.
Sharing systems, multi tasking system, multi user systems, multi processor systems. Network Operating System.

**Introduction to System Software:** System VS Application Software, Compiler Vs Interpreter, Linker, Loaders.

**References**
1. V. Rajaraman, Foundamentals of Computers, PHI
2. Lary Long and Nancy Long, Computers, PHI.

**PAPER : B  PC SOFTWARE**

<table>
<thead>
<tr>
<th>Maximum Marks: 70</th>
<th>Time: 3 Hrs.</th>
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<tbody>
<tr>
<td>Minimum Pass Marks: 35%</td>
<td>Lectures to be delivered: 40-45 Hrs.</td>
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</table>

**A) INSTRUCTIONS FOR THE PAPER SETTER**

The question paper will consist of five sections: A, B, C, D and E. Section A, B, C and D will have two questions from the respective section of the syllabus and will carry 20% marks each. Section E will consist of 5-10 short-answer type questions, which will cover the entire syllabus uniformly and will carry 20% marks in all.

**B) INSTRUCTIONS FOR THE CANDIDATES**

1. Candidates are required to attempt one question each from the sections A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

**SECTION-A**

**Disk Operating System:** DOS, system files, commonly used Internal and External Commands, Batch Files, Config Sys and Autoexec. Bat.

**Windows XP:** Windows concepts, working with windows-desktop, Basic layout, Icons, Opening windows, Window Characteristics, Window Controls, Resize Windows, Arrange Windows, task bar, Working with Screen Saver.

Files and Folder-organization, Searching for files, working with folders through window explorer.

Maintenance-Recycle Bin, Disk Cleanup, Add and Remove Programs.

**SECTION-B**

**Word Processing : MS Word 2003:** Introduction to World Processing, Toolbars, Ruler, Menu, Keyboard Shortcut. Previewing documents, printing documents, Formatting documents, Checking the grammar and spelling, formatting via find and replace, Using the Thesaurus, using Auto Correct, word count Hyphenating, Mail merge, mailing Labels
Wizards and Templates, Handling Graphics, tables as Converting a word document into various formats.

SECTION-C

MS Power-Point 2003: Introduction, Elements of Power Point Package, Starting and exploring Power Point menus (Insert, Format, Tools, Slide Show, Window, Help options and all of their features, Options and sub options etc.). Creating, inserting, deleting and formatting slides, Formatting and enhancing text, Slides with graphs, Giving Animation to slides, Transfer of files between Power Point and other word processors and software packages.

SECTION-D

Worksheets: MS EXCEL 2003: Creating worksheet, entering data into worksheet, Entering, data, dates, alphanumeric, values, saving & quitting worksheet, Opening and moving and existing worksheet, Toolbars and Menus, keyboard shortcut. Working with single and multiple workbooks, working with formulation & cell referencing, formatting of worksheet.

References:

PAPER: C PRACTICAL BASED ON PAPER A & B

<table>
<thead>
<tr>
<th>Maximum Marks: 60</th>
<th>Time: 4 Hrs.</th>
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<tbody>
<tr>
<td>Minimum Pass Marks: 35%</td>
<td>Practical Units to be conducted: 30</td>
</tr>
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</table>

The laboratory course will comprise of exercise from Paper A & B

The break up of marks for the practical will be as under:

- Lab Record : 10 Marks
- Viva Voce : 15 Marks
- Program Development and Execution : 35 Marks

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(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 20% marks each. Section E will consist of 5-10 short answer type questions, which will cover the entire syllabus uniformly and will carry 20% marks in all.

(B) Instructions for the Candidates:
Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

Section-A
Computer networks- Hardware, Software, users, goals and applications of computer networks.
Types of Network: Local area networks, wide area networks, metropolitan area networks and value added networks - their features.
Transmission media: Magnetic media, twisted pair, coaxial cables, fibre optics, radio transmission, microwave transmission, infrared waves and Line of sight transmission, Cellular radio and communication Satellites.

Section-B
Internet: What is Internet, its advantages, disadvantages, internet facilities through WWW and HTML, Internet Protocols, TCP/IP, FTP, newsgroups, remote logins, chat groups etc.
WWW: the client side, the server side, web browsers, web pages, locating information on the web.
E-Mail: architecture, various aspects, the user agent, message format, message transfer, e-mail privacy.

Section-C
HTML: Introduction to HTML, SGML, Internet and Web structure of HTML document.
Starting an HTML document: Head element, body element, style element, Script element, Text formatting, using lists to organise information.
Organising Data with Table: Basic table Structures, individual cells and headings, vertical controls, database considerations, displaying real data with a table.
Table Layout and Presentation: Table Syntax, two column layout, staggered body with an index, traditional newspaper layout.
Section-D

Uniform Resource Locators (URLs): Absolute URLs, Relative URLs, fragment URLs, Types of URL Schemes- HTTP, mailto, news, FTP, Telnet, File etc.
Using Hyper Links and Anchors: Uses to Hyper Links, Structure of Hyper Links, Links to specialised contents.
Images: Adding Images to web page, using images as links, creating menus with image maps, image formats-GIF, JPEG etc.

REFERENCES:

5. Rick Darnell et al, HTML 4 Unleashed, Tech media Publications.
Paper: B Programming Fundamentals Through “C” Language

Maximum Marks: 70
Minimum Pass Marks: 35%

Maximum Time: 3 Hrs.
Lectures to be delivered: 75 Hrs.

(A) Instructions for the Paper setter:
The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 20% marks each. Section E will consist of 5-10 short answer type questions, which will cover the entire syllabus uniformly and will carry 20% marks in all.

(B) Instructions for the Candidates:
Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.

SECTION-A
Programming process: Problem definition, program design, coding, compilation and debugging.
Fundamentals of C: Identifiers and keywords, data types, input and output, type conversion, operators and expressions: Arithmetic, unary, logical and relational operators, assignment operator, conditional operator, and library functions.

SECTION -B
Control statements: branching, looping using for, while and do-while statements, nested control structures, switch, break and continue statement
Functions: definition, call prototype and passing arguments to a function, recursion versus iteration
Storage classes: automatic, external and static variables.

SECTION -C
Arrays: Definition, accessing elements, initialization, passing to functions, multi dimensional arrays, strings
Pointers: address and referencing operators, declaration, assignment, passing pointer to functions, pointer arrays

SECTION -D
Structures: variables, accessing members, nested structures, pointer to structures and union.
Files in C: Sequential files, random access files, Unformatted files, Text files, binary files.

Text Book:

References:
1. Ram Kumar and Rakesh Aggarwal: Programming in ANSI C, TMH
Paper : C  Practical Based On Paper A And B

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<td>Practical Units to be conducted : 60</td>
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</table>

The laboratory course will comprise of exercise to what is learnt under Paper A & B.

The break up of marks for the practical will be as under:

- Lab Record : 10 Marks
- Viva Voce : 15 Marks
- Program Development And Execution : 35 Marks