ASIAN EDUCATIONAL INSTITUTE

(AN AUTONOMOUS COLLEGE)

FUNDAMENTALS OF COMPUTERS

Subject Code: BCOMP101

B.Sc (Honours) PHYSICAL SCIENCES

SEMESTER-I
SESSION 2025-26

(Minor Theory)

Total Marks: 70

External Marks: 50

Internal Assessment: 20

Maximum Time: 3 Hrs

Minimum Pass Marks: 35%

Lectures to be delivered: 45-55hr

Credits:04(03T+01P)

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.

2. Use of non-programmable scientific calculator is allowed.

SECTION A

Computer Fundamentals: Block diagram of a computer, characteristics of computers and generations of computers. Categories of Computers - Supercomputer, mainframe computer network server, Workstation, Desktop computers, notebook computer, Tablet PC, handheld PC, smart phone.

Input Devices: Keyboard, Mouse, Joy tick, Track Ball, Touch Screen, Light Pen, Digitizer, Scanners, Speech Recognition Devices, Optical Recognition devices – OMR, OBR, OCR

Output Devices: Monitors, Impact Printers - Dot matrix, Character and Line printer, Non Impact Printers – DeskJet and Laser printers, Plotter.

Memories: Memory Hierarchy, Primary Memory – RAM, ROM, Cache memory. Secondary Storage Devices - Hard Disk, Compact Disk, DVD, Flash memory.

Software: Types of Software- System Software, Application Software, Firmware. Type of System Software: Operating Systems, Language Translators, Utility Programs, Communications Software. Commonly Used Application Software: Word Processor, Spreadsheet, Database, Education, Entertainment Software.

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Computer Languages: Machine language, assembly language, high level language, 4GL.

SECTION B

Computer Codes: weighted and non-weighted code, BCD, EBCDIC, ASCII, Unicode.

Computer Network: Network types, network topologies.

Internet Related Concepts: Internet, World Wide Web, Hypertext, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Services Providers, Internet Security, Web Search Engine, Net Surfing, web portal, Wiki, Blog.

Advanced Trends in IT : Mobile Internet, GPS, 3G, 4G, Wi-Fi, Bluetooth, Cloud Technology, Virtual LAN Technology, Firewall, E-Commerce, M-Commerce, Nanotechnology, Virtual Reality, BPO and KPO, Online shopping, Social Media - YouTube, FaceBook, Linkedin, Twitter, Google+.

Applications of IT: IT in Business and Industry, IT in Education & training, IT in Science and Technology, IT and Entertainment, Current Trends in IT Application - AI, Virtual Reports, voice recognition, Robots, Multimedia Technology.

Reference Books:

1. Peter Nortorn, Introduction to Computers, Seventh Edition

2. V. Rajaraman, Fundamentals of Computers, PHI.

3. Larry E. Long and Nancy Long, Computers: Information Technology in Perspective, PHI.

4. N. Subramanian, Introduction to Computers, Tata McGraw-Hill.

5. D.H. Sanders, Computers Today, McGraw- Hill.

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PAPER BCOM101: PRACTICAL BASED ON PAPER BCOM101

Maximum Marks: 30   **Maximum Time: 3 Hrs.**

Minimum Pass Marks: 35%

The laboratory course will comprise of Activities related to Windows and exercise to what is learnt under Paper **BCOM101** such as:

Operating System

Activity 1: Installation and Software & Drivers installation.

Activity 2: Basic components of Window-Desktop, Icons, Taskbar, Status Bar,

Wallpapers, Screen Saver

Activity 3: Start Menu: Accessories- Notepad, Calculator, Clock, Date and Time, Disk Defragmentation, Working with Control Panel.

Activity 4: Taskbar properties - Maximize Minimize, Restore, and Close.

Activity 5: Creating Files, Folders, Shortcuts, Moving folders (right click options)

Internet

Activity 1: Connecting through Wi-fi, Blue tooth and Hot Spot.

Activity 2: Web Surfing, searching contents through Search Engines.

Activity 3: Creating and maintaining Web Blogs and Web portals

Social Media

Activity 1: Creating account, linking accounts, setting profiles and preferences.

Activity 2: Posting messages, replying, forwarding, tagging contents.

Activity 3: Online shopping, comparing prices etc.

Activity 4: Creating and maintaining social profiles at Linkedin, FaceBook, Twitter etc.

The breakup of marks for the practical will be as under:

Lab Record : 05 Marks

Viva Voce : 10 Marks

Program Development And Execution : 15 Marks

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Total Marks: 70

External Marks: 50

Internal Assessment: 20

Maximum Time: 3 Hrs

Minimum Pass Marks: 35%

Lectures to be delivered: 45-55hr

Credits:04(03T+01P)

COURSE OBJECTIVES:

- Learn MS word
- Learn MS Power point
- Know MS Excel
- To give fundamental knowledge Office tools.
- Basic concepts of word, PowerPoint, excel.
- To make the learners acquainted with the use of presentation sheets and documents.

LEARNING OUTCOME:

- On the successful completion of the course, students will be able to.
- Have a clear understanding of documents, sheets and presentation.
- Develop an in depth knowledge of various office theories.
- Develop skills to get employment in I.T. Field.

A) Instructions of paper-setter

The question paper will consist of three sections, Section A, B & C. Section A & B will have four questions each from the respective sections of the syllabus. Each question will carry 7.5 marks, which may be segregated into sub-parts. Section C will be compulsory with 10 short answer type questions of 02 marks each, which will cover the entire syllabus.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from section A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.
3.

SECTION A

OFFICE: Basic layout, components, Office Characteristics, Common Office Controls and shortcuts for Home, Insert, Page Layout, Mailing, Review and View
Word: Introduction to Word Processing, Toolbar, Ruler, Menus, 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,

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Hyphenating, Mail merge mailing Labels Wizards and Temples, Handing Graphics, tables as converting a word document into various formats.

Power Point: Introduction, Elements of Power Point Package, Staring 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.

SECTOIN B

EXCEL: 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 & referencing, formatting of worksheet.

ACCESS: Introduction to ACCESS database, working with databases and tables, queries in Access. Introduction to forms, sorting and filtering, controls. Creating reports, Using Macro

Text/Reference Books:
1. Rob Tindrow, Jim Boyce, Jeffrey R. Shapiro, Window 10 Bible, Wiley.
2. LibreOffice 6.0 Writer Guide, LibreOffice Documentation Team

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Asian Educational Institute

(An Autonomous College)

Subject: Automation Tools (Practical)

B.Sc (Hons.) Physical Sciences

Sem- II

Practical Code: BCOMP102L

Minimum passing marks: 35%

Total Marks:30

This laboratory course will comprise the following list of practical based on any GUI based Operating system (Unix/Window/Mac) and concepts of Office Automation:

Operating System

Activity 1: Operating System Installation and Software & Drivers installation.

Activity 2: Basic components of GUI-Desktop, Icons, Taskbar, Status Bar, Wallpapers, Screen Saver.

Activity 3: Start Menu: Accessories- Notepad, Calculator, Clock, Date and Time, Disk Defragmentation, Working with Control Panel/Settings.

Activity 4: Taskbar properties - Maximize Minimize, Restore, and Close.

Activity 5: Creating Files, Folders, Shortcuts, Moving folders (right click options).

Excel

Activity 1:

i. Create, open, save and close workbook.

ii. Create a new worksheet, renaming and moving sheet.

iii. Entering, copying, moving and deleting data in cells and worksheets.

iv. Insert and delete cells, columns and rows in Excel.

Activity 2:

i. Formatting of data in cells.

ii. Text formatting (font size, font style, font color, Cell border etc.)

iii. Text Alignment.

iv. Text Orientation, Text Direction, Text Control.

Activity 3:

i. Find and replace data in a sheet.

ii. Perform data sorting and data filtering in Excel.

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iii. Protect your Worksheet and Workbook.

iv. Enter and perform some basic formulas in excel.

Activity 4:

i. Perform some basic Functions in Excel.

ii. Create a chart in Excel.

iii. Create different types of Charts in excel.

iv. Set a size, margin, orientation of page in Excel.

v. The print properties of a worksheet in Excel.Activity 5:

i. Hide and unhide row and column in Excel.

ii. Set column width and row height in Excel.

iii. Adding text Box, header/footers, pictures and special symbols in your worksheet.

iv. Arranging, splitting and hiding windows in Excel. And also freezing panes.

v. Create and run Macros in Excel.

Word

Activity 1:

i. Create, open, save and close a document.

ii. Typing, copying, moving and deleting data in word document.

iii. Perform Save and Save as, Cut and Copy, Paste and Paste Special.

Activity 2:

Formatting of data in word Document: -

i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)

ii. Text Alignment and character spacing.

iii. Indention and line spacing.

iv. Border and shading.

v. Bullets and Numbering.Activity 3:

i. Find and replace and data sorting in a document.

ii. Protect your document.

iii. Add chart in word document. Create different types of Charts in word.

iv. Set a size, margin, orientation of page, Hyphenation, Columns and Line Numbers in Word.

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Activity 4:

i. Set Page Color, Page Border, Themes, and Watermarks in Word.

ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box in your word document.

iii. Showing Ruler, Gridlines, Document Map, Thumbnails, Inserting Word Art, Drop Cap, Hyperlink, Equation etc. in word document.

Activity 5:
i. Arranging, splitting windows in word
ii. Perform Mail-merge in word
iii. Create and run Macros in Word
iv. Set the print properties of a word document

PowerPoint

Activity 1:

i. Create, open, save and close a Presentation.

ii. Typing, copying, moving and deleting data in presentation.

iii. New Slide, understanding Slide Layout, adding and deleting slides.

Activity 2:

Formatting of data in slides: -

i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)

ii. Text Alignment and character spacing.

iii. Indention and line spacing.

iv. Border and shading.

v. Bullets and Numbering.Activity 3:

i. Set a size, margin, orientation of slides in PowerPoint.

ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box etc. in your presentation.

Activity 4:

i. Adding Animation and Transition Effects in Slides, Understanding Slide Show.

ii. Presentation Views, Understanding Formatting commands in PowerPoint.

Activity 5:

i. Create and run Macros in PowerPoint.

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ii. Arranging, splitting windows in PowerPoint

The breakup of marks for the practical will be as under

i.   Practical – 15 Marks
ii. Viva – 10 Marks
iii. Lab records, Program development and Execution (External Evaluation) – 5 Marks

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