STUDENT ASSIGNMENTS (SESSION 2023-24)

Certificate of Information Technology (Distance Mode)

Guidelines to submit Assignments
The students are required to read carefully and follow the instructions given below:

1. Submission of one complete Assignment in each paper of the programme is compulsory.
2. Completed Handwritten Assignments on A4 size papers in a PDF format need to be submitted on Google Classroom on or before the due date
3. Write your Name, Father's Name and Roll Number as required on the cover page of each Assignment.
4. For Assignments Submitted after due date mentioned, a late fee of Rs. 100/- per assignment will be payable through Demand Draft in favor of Jamia Millia Islamia, Payable at New Delhi
5. For ex-students who failed to submit assignments during the course of the programme are required to submit Rs. 200/- per assignment payable through Demand Draft in favor of Jamia Millia Islamia, Payable at New Delhi.
6. Please go through your Programme Guide carefully for further details.
7. Last Date for Assignment Submission is **30-Sep.-2024**
8. **Link for Google Class Room:**
   https://classroom.google.com/c/NjUwNDQ3NzM4MzIz?cjc=habatiw

Assignment Name Must be **CODE_ROLLNO** for example **CIT101_D23CIT001**

NOTE: Attempt any **THREE** questions from each Assignment and Each Question carry **10** marks. Total Marks for each Assignment is 30.

CIT-101 Fundamental of Computing

1 Define the concept of data and information. How do they differ from each other?

2 How are computers used in office automation? Give examples of specific software applications.

3 Explain the various methods of data representation in computers. Convert the following binary numbers to decimal and vice versa: 10100101, 100001, 111111100, 100000001

4 What is Flowchart? Discuss the symbols used in flowchart and draw the flowchart to find the roots of quadratic equation.

5 What is an algorithm? Explain the characteristics of a good algorithm. Write an algorithm to find the factorial of any given number

CIT- 102 Introduction to Computer Systems

1 Explain the basic organization of a computer system, including the functions of the CPU (Central Processing Unit), memory (RAM), and I/O (Input/Output) devices. Discuss the von Neumann architecture and its components. Compare and contrast Harvard architecture with von Neumann architecture.

2 Differentiate between temporary storage (RAM) and permanent storage (e.g., HDD, SSD). Discuss the characteristics and advantages of each type of storage device. Explain how data is stored, accessed, and managed in temporary and permanent storage.

3 Describe the characteristics and use cases of different types of PCs, such as desktops, laptops, workstations, and servers. Discuss how their form factors, performance capabilities, and portability differ. Provide examples of industries or professions that typically use each type of PC.

4 Explain the process of connecting input and output devices (e.g., keyboard, mouse, monitor, printer) to a desktop or laptop PC. Discuss common connection interfaces (e.g., USB, HDMI, VGA) and their compatibility with different devices. Provide troubleshooting tips for resolving connectivity issues.

5 Define parallel computing and explain its significance in modern computer systems. Discuss the principles of parallel processing and the benefits of using multiple processors or cores. Provide examples of applications that benefit from parallel computing, such as scientific simulations or big data analysis.

CIT- 103 PC Application Software (MS Office)

1 Design a budget spreadsheet using Microsoft Excel 2007. Your budget should include:
a. Monthly income and expenses.
b. Categories for different expenses (e.g., rent, utilities, groceries).
c. Formulas to calculate total income, total expenses, and remaining balance.
d. Formatting for clarity and professionalism.
e. Utilize Excel features like SUM, AVERAGE, and IF functions where appropriate.

2 Conduct a mail merge exercise using Microsoft Word 2007. Create a sample letter template and a corresponding data source (e.g., Excel spreadsheet or Outlook contacts). Perform the following tasks:

a. Insert merge fields into the letter template for recipient names and addresses.
b. Connect the template to the data source and preview the merged results.
c. Customize the letter for individual recipients using conditional merge fields (if applicable).
d. Print or email the merged documents, demonstrating proficiency in the mail merge process.

3 Explore the importance of transition and animation effects in a presentation created with Microsoft PowerPoint 2007. Discuss the different types of transitions (e.g., fade, slide, zoom) and animations (e.g., entrance, emphasis, exit) available. Provide examples of when and how these effects can be used effectively to engage the audience and convey information visually.

4 Explain the fundamental principles of relational databases and how they apply to Microsoft Access 2007. Discuss key concepts such as tables, relationships, queries, forms, and reports. Describe the advantages of using a relational database management system (RDBMS) like Access for organizing and managing data compared to flat file or spreadsheet-based systems.

5 Explore the functionality of PivotTables and PivotCharts in Microsoft Excel 2007 for data analysis and reporting. Explain how PivotTables can be used to summarize, analyze, and manipulate large datasets dynamically. Discuss how PivotCharts can visualize PivotTable data in various chart formats for enhanced data analysis and presentation.

CIT- 104 Internet & Multimedia

1 Define IP addresses and domain names. Discuss the purpose of DNS (Domain Name System) and its role in translating domain names into IP addresses. Describe the hierarchical structure of domain names (e.g., top-level domains, subdomains) and how DNS resolution works.

2 Define e-commerce and its significance in modern business transactions. Describe different types of e-commerce models (e.g., B2B, B2C, C2C) and provide examples of popular e-commerce platforms.

3 Describe the architecture of the World Wide Web (WWW), including clients, servers, and protocols (e.g., HTTP, HTTPS). Explain the process of retrieving web pages from servers and rendering them in web browsers. Discuss the role of URLs (Uniform Resource Locators) in identifying resources on the web.

4 Explain the concept of multimedia systems and their components (e.g., text, graphics, audio, video). Discuss the importance of integrating various media types to create cohesive user experiences. Provide examples of popular multimedia applications and their uses.

5 Define mobile computing and discuss its importance in today's digital landscape. Explain the characteristics and challenges of mobile computing compared to traditional computing environments. Provide examples of mobile devices and their applications.

CIT-105 Computer Programming(C,C++)

1 Create a C program that simulates a simple calculator. Prompt the user to enter two numbers and an arithmetic operation (addition, subtraction, multiplication, or division). Use a switch statement to perform the selected operation and display the result.

2 Create a C program to calculate the factorial of a given number using a while loop. Prompt the user to enter a non-negative integer, then use a while loop to calculate and display its factorial.

3 Develop a C program that defines a function called factorial to calculate the factorial of a given integer. Prompt the user to enter a non-negative integer, call the factorial function, and display the result.

4 Describe the concept of inheritance in OOP and its role in code reusability and hierarchy creation. Differentiate between base classes (superclasses) and derived classes (subclasses) and explain how inheritance enables the reuse of code and the extension of functionality. Provide examples of inheritance relationships and discuss when to use inheritance.

5 Explain the concept of strings in C programming. Discuss the difference between a string and a character array. Describe how strings are represented in memory and how string functions like strlen(), strcpy(), and strcat() manipulate string data.