

CERTIFICATE IN INFORMATION TECHNOLOGY (CIT)

ASSIGNMENTS

(July - 2026 & January - 2027)

(CIT-001, CIT-002, CIT-003 and CITL-001)



**SCHOOL OF COMPUTER AND INFORMATION SCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068**

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Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to CIT Programme Guide.
3. To become eligible for appearing the Term End Practical Examination for the lab course CITL-001, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the CIT Programme Guide.

Course Code : **CIT-001**
Course Title : **Fundamentals of Computer Systems**
Assignment Number : **CIT/CIT-001/ASSIGN/2026-27**
Maximum Marks : **25**
Last Dates for Submission : **31st October, 2026 (For July Session)**
15th April, 2027 (For January Session)

There are four questions in this assignment, which carry 25 marks. Answer all the questions. You may use illustrations and diagrams to enhance the explanations. Please go through the guidelines regarding assignments given in the CIT Programme Guide. The examples, whenever asked to be given, should be different from those that are discussed in the corresponding course material.

Question 1:

- (a) Define a computer system from a functional perspective. Draw a functional block diagram of its architecture and illustrate the operational interactions among the Central Processing Unit (CPU), memory units, and peripheral interfaces. **(2 Marks)**
- (b) Describe the role of input and output devices in modern computing. Briefly explain the any two distinct types of output devices. **(2 Marks)**
- (c) Describe need of secondary storage systems. Contrast secondary storage with primary memory on parameters of volatility, latency, cost per unit of storage, and capacity constraints. **(2 Marks)**

Question 2:

- (a) Differentiate between system software and application software. Discuss where utility software fits within this system hierarchy, and explain how its service delivery to the operating system differs from that of specialized application tools with example. **(2 Marks)**
- (b) Define a flowchart and tell its utility. List and explain the standard geometric symbols used in flowchart construction, and design a flowchart to calculate simple interest. **(3 Marks)**
- (c) Write a C program that prompts the user to input the side of a square, and computes its total surface area, and displays the result. **(2 Marks)**

Question 3:

- (a) Describe the foundational objective of a computer network. Compare and contrast the physical layout and point-of-failure vulnerabilities of the Ring topology with those of the Bus topology. **(2 Marks)**
- (b) List the technical and operational distinctions between synchronous and asynchronous data transmission modes. Provide distinct, real-world networking examples of each mode. **(2 Marks)**

- (c) Describe the ISO/OSI Reference Model by listing its seven structural layers in sequential order. Succinctly describe the unique network responsibility assigned to each layer. **(3 Marks)**

Question 4:

- (a) Define the structural ecosystem of social networking platforms. Evaluate its primary societal benefits, the advantages of its communication velocity. How is it useful in promoting professional collaboration. **(2 Marks)**
- (b) Justify the institutional necessity of establishing rigorous information security frameworks within an organization. Identify and classify four modern security threats that actively compromise computer networks. **(2 Marks)**
- (c) Define the term 'computer virus' and classify the major categories of computer viruses. **(1 Marks)**