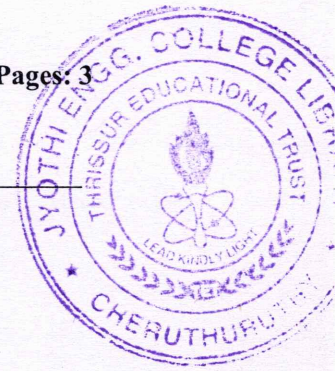


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**B.Tech Degree S2 (R) Examination May 2025 (2024 Scheme)****Course Code: GXEST203**

**Course Name: FOUNDATIONS OF COMPUTING: FROM HARDWARE ESSENTIALS
TO WEB DESIGN**

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A*(Answer all questions. Each question carries 3 marks)*

CO Marks

- | | | | |
|---|--|-----|-----|
| 1 | Differentiate between parallel bus and serial bus. | CO1 | (3) |
| 2 | Explain the boot process in a computer, from power-on to loading the operating system. | CO1 | (3) |
| 3 | Explain how a CPU executes an arithmetic operation (e.g., addition of two numbers) using the fetch-execute cycle. | CO2 | (3) |
| 4 | Illustrate unsigned integer representation and signed integer representation with an example. | CO2 | (3) |
| 5 | Consider a multi-office company with each office site within the city. The offices are equipped with a network of computers. Explain the possible type of networks involved in the communication between two computers of the company. | CO3 | (3) |
| 6 | Explain the different types of system software. | CO3 | (3) |
| 7 | Create an unordered list and a hyperlink using HTML. | CO4 | (3) |
| 8 | In what situations would JavaScript be more useful than HTML and CSS alone? Provide an example. | CO4 | (3) |

PART B*(Answer any one full question from each module, each question carries 9 marks)***Module -1**

- 9 a) Discuss the memory hierarchy in a computer system, explaining the functions of registers, cache memory, RAM, and virtual memory. CO1 (5)
- b) What are the advantages of using SSDs over HDDs for data storage? CO1 (4)
- 10 a) Explain the hardware architecture of a computer. CO1 (5)
- b) Define firmware. How does it differ from software? CO1 (4)

Module -2

- 11 a) A new character encoding system is being developed for a multilingual application. Explain why Unicode would be preferred over ASCII for such purposes. CO2 (5)
- b) Describe the function of an instruction set and explain how it facilitates software – hardware interaction. CO2 (4)
- 12 a) Explain the fetch-decode-execute cycle in detail, and describe the sequence of events that occur during instruction execution in a CPU. CO2 (5)
- b) Illustrate the addition of two 4-bit binary numbers and explain the process step by step. CO2 (4)

Module -3

- 13 a) A company has multiple offices in different cities and requires seamless data sharing. Compare the suitability of client-server and peer-to-peer networks for this purpose, and recommend the better option. CO3 (5)
- b) Provide the Linux commands for the following operations: CO3 (4)
- (i) Create a directory
 - (ii) List all the files and sub folders in a directory
 - (iii) Copy the contents of a text file
 - (iv) Change the access permissions of files and directories.
- 14 a) Compare star, mesh, and ring network topologies with suitable diagrams. CO3 (5)
- b) Examine the components of the World Wide Web, including HTTP and HTTPS protocols. CO3 (4)

Module -4

- 15 a) Create an HTML structure for a student registration form. Include the following fields:
Name (text input), Age (number input), Gender (radio buttons), and Submit button. CO4 (5)
- b) Write a JavaScript program to display an alert box that shows the current date and time when a button is clicked. CO4 (4)
- 16 a) Design a webpage using HTML and CSS for an online bookstore. Include a title, a heading, a list of book categories, and a basic style. CO4 (5)
- b) Write a CSS rule to style a paragraph with the following properties:
Font colour: Dark green, Font size: 16px, Line height: 1.5. CO4 (4)
