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: (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.	CO3	(4)
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)

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