CBCS SCHEME

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1BESC104E

First Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Essentials of Information Technology

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What is flip flop? Explain the working of a simple flip flop circuit.	6	L2	CO1
	b.	Explain the three major categories of machine instructions with suitable examples.	6	L2	CO1
	c.	What is machine cycle? Explain the procedure of computer programs are execution.	8	L2	CO1
		OR			
Q.2	a.	What is the role of Controllers while communicating computer with other devices.	6	L2	CO1
	b.	With block diagram explain the computer architecture.	6	L3	CO1
	c.	Explain the organization of magnetic systems, optical systems and flash drives for mass storage.	8	L2	CO1
		Module – 2			
Q.3	a.	What is bootstrapping? Explain the booting process.	10	L3	CO2
	b.	Explain the deadlock problem which arises during resource allocation.	6	L2	CO2
	c.	List the problem-solving phases used for program development.	4	L1	CO2
		OR			
Q.4	a.	Explain briefly the function of : i) Window manager ii) File Manager iii) Memory Manager iv) Scheduler	8	L3	CO2
	b.	Summarize the distinctions between a process, an algorithm and a program.	6	L1	CO2
	c.	Explain how multiprogramming works between various processes in the system.	6	L2	CO2
		Module – 3			
Q.5	a.	With neat diagram, explain Internet Architecture.	10	L3	CO2
	b.	Define Artificial Intelligence (AI) and discuss the ethical risk of biases in AI model in critical areas.	4	L1	CO2
	c.	What is URL? With diagram explain the segments of typical URL.	6	L2	CO3

		OR			
Q.6	**a.**	With suitable diagram explain the use of switch and repeater in networking.	**8**	**L3**	**CO2**
	b.	Explain the practices used to keep password safe and secure as part of good cyber hygiene.	**6**	**L3**	**CO5**
	c.	Define online tracking and explain the effects of social media addictions.	**6**	**L2**	**CO5**
		Module – 4			
Q.7	**a.**	Explain the traditional development phases of the software life cycle.	**8**	**L2**	**CO4**
	b.	Describe the concept of Modularity and explain why it is essential for large-scale software systems.	**6**	**L2**	**CO4**
	c.	With diagram explain the conceptual layers of database implementation.	**6**	**L2**	**CO4**
		OR			
Q.8	**a.**	Compare and contrast the Waterfall model with Incremental and Iterative software development methodologies.	**8**	**L3**	**CO3**
	b.	Explain the role of Unified Modeling Language (UML) in software engineering. Develop use case diagram for Hospital Records System.	**6**	**L2**	**CO4**
	c.	Explain with example Three relational database operations.	**6**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the basic structure of an HTML page with example.	**6**	**L2**	**CO3**
	b.	Explain the fundamental difference between 2D and 3D computer graphics. Which of these typically requires more computational power and why?	**6**	**L2**	**CO3**
	c.	Illustrate the importance of CSS in modern Web design. Develop a CSS to have page background color 'white', Heading-1 with color 'Black' with text alignment to center and paragraph with font family 'Times New Roman' with font size of 30px.	**8**	**L3**	**CO3**
		OR			
Q.10	**a.**	Explain how user can create tables in HTML to help organize data.	**6**	**L2**	**CO3**
	b.	Discuss the role of "Shading" and "Lighting" in the rendering process. How do they contribute to the realism of an image?	**6**	**L2**	**CO3**
	c.	Explain how the folder structure helps in linking files such as images or style sheets in HTML.	**8**	**L2**	**CO3**

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