Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination, 2025-26

Essentials of Information Technology (1BESC104E/204E)

TIME: 03 Hours **Max.Marks:100**

Notes:

1. *Answer any FIVE full questions, choosing at least ONE question from each MODULE*
2. *M: Marks, L: Bloom's level, C: Course outcomes.*
3.

		Module - 1	M	L	C
Q.1	a	Explain the organization of a main memory and memory capacity measurements.	06	L2	CO1
	b	Explain the three major categories of machine instructions with suitable examples.	06	L2	CO1
	c	Explain the role of controllers in communication with devices. Summarize the features of memory-mapped I/O and Direct memory access (DMA).	08	L2	CO1
		OR			
Q.2	a	Explain the organization of magnetic systems, optical systems and flash drives for mass storage.	08	L2	CO1
	b	Convert each of the following two's complement representations to its equivalent base 10 form. a) 00011 b) 11010 c) 01111	06	L2	CO1
	c	Compare RISC and CISC architectures.	06	L2	CO1
		Module – 2			
Q.3	a	Explain how different components of an operating system cooperate to manage hardware and software resources efficiently.	08	L2	CO2
	b	Define an algorithm. Explain pseudo code representation of an algorithm with a suitable example.	08	L2	CO2
	c	Distinguish between time-sharing and multitasking systems.	04	L2	CO2
		OR			
Q.4	a	Define process in operating systems. Explain the roles of the scheduler and dispatcher in process management within operating system.	08	L2	CO2
	b	Explain the necessary conditions for deadlock to occur. How to avoid the deadlock?	08	L2	CO2
	c	With block diagrams, distinguish between Batch processing and Interactive processing in operating systems.	04	L2	CO2
		Module – 3			
Q.5	a	Explain the role of repeater, switch, router and access point in computer networks.	07	L2	CO2

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	b	Summarize the best practices to be followed to keep passwords safe and secure as part of good cyber hygiene.	07	L2	CO5
	c	Explain the effect of social media addiction and breach of online privacy.	06	L2	CO5
OR					
Q.6	a	Explain the Internet architecture with a block diagram.	07	L2	CO2
	b	What is cybersecurity? what does the CIA Triad represent in cybersecurity practice? Explain.	07	L2	CO5
	c	How do ownership rules help to prevent misuse of digital content? Describe five rules.	06	L2	CO5
Module – 4					
Q.7	a	Explain the four stages of the traditional software development life cycle.	06	L2	CO4
	b	Describe how modularity facilitates understanding, debugging and modifying large software systems. Develop a simple structure chart for tennis game.	07	L3	CO4
	c	With a diagram, explain the conceptual layers of a database implementation. Develop a query to retrieve names of male employee s from a table Employee (Id, Name, gender, age, salary).	07	L3	CO4
OR					
Q.8	a	Explain different software engineering methodologies with suitable examples.	06	L2	CO4
	b	Explain the role of Unified Modeling Language (UML) in software engineering. Develop use case diagram for Hospital Records System.	07	L3	CO4
	c	Explain Three relational database operations. Develop a query to insert the record into the table Employee (Id, Name, gender, age, salary).	07	L3	CO4
Module – 5					
Q.9	a	Explain the structure of an HTML page. Develop a simple HTML form to submit the information such as first name, last name and gender.	07	L3	CO3
	b	Explain how the folder structure helps in linking files such as images or style sheets in HTML.	07	L2	CO3
	c	Outline the differences between 2D graphics, image processing and 3D graphics.	06	L2	CO3
OR					
Q.10	a	Illustrate the importance of CSS in modern Web design. Develop a CSS to have page background color ‘light blue’, Heading-1 with color ‘white’ with text alignment to center and paragraph with font family ‘verdana’ with font size of 20px.	07	L3	CO3
	b	What is rendering in computer graphics? Describe the stages of clipping, scan conversion and hidden-surface removal in the rendering pipeline.	07	L2	CO3
	c	List and explain the three main stages in 3D image generation.	06	L2	CO3