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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

Branch: Computer Science and Engineering **Duration: 3 hrs.**

Course Code: 22CS7PEHCI **Max Marks: 100**

Course: Human Computer Interaction, Virtual and Augmented Reality

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

REAPPEAR EXAMS 2024-25

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Describe the significance of input-output channels in human-computer interaction and provide examples of how they influence system design.	CO1	PO1	**6**
	b)	Explain the different types of human memory relevant to HCI and state their implications for designing user interfaces	CO1	PO1	**7**
	c)	Design an interface for a note-taking application, considering user memory limitations. Explain your design choices.	CO1	PO1	**7**
		OR			
2	a)	Compare the advantages and limitations of text entry devices versus pointing devices in terms of efficiency and usability.	CO1	PO1	**6**
	b)	Discuss different models of interaction in HCI and how it is used to understand the user behavior.	CO1	PO1	**7**
	c)	Propose a framework for evaluating a mobile application using principles from interaction models. Include key metrics in your framework.	CO1	PO1	**7**
		UNIT - II			
3	a)	Discuss the application of user interface evaluation using GOMS	CO1	PO1	**10**
	b)	Analyse the concept of physical and device models in HCI. How do they contribute to designing interactive systems?	CO1	PO1	**10**
		OR			
4	a)	Describe goal and task hierarchies in cognitive models. Explain their importance in designing effective user interfaces.	CO1	PO1	**10**

		b)	Compare linguistic models and physical models in HCI. Highlight their relevance in different design scenarios.	CO1	PO1	**10**
			UNIT - III			
	5	a)	Analyse the evolution of Augmented Reality (AR) from its inception to its current state. Highlight key milestones in its development.	CO2	PO2	**10**
		b)	Describe at least three real-world scenarios where AR is currently applied. Explain the benefits it provides in each case.	CO2	PO2	**10**
			OR			
	6	a)	Discuss how transformation and coordinate systems are used to achieve accurate calibration and registration in AR?	CO2	PO2	**10**
		b)	Illustrate a practical example of how calibration and registration are performed in an AR system. Include steps and methods used.	CO2	PO2	**10**
			UNIT - IV			
	7	a)	Explain the process of camera calibration in AR. Highlight the importance of accurate calibration in creating realistic projections.	CO2	PO2	**10**
		b)	Compare different camera calibration techniques. Highlight their advantages and limitations.	CO2	PO2	**10**
			OR			
	8	a)	Discuss pose estimation and its significance in AR applications with an example.	CO2	PO2	**10**
		b)	Compare stationary tracking systems and mobile sensor-based tracking. Discuss their suitability for different AR scenarios.	CO2	PO2	**10**
			UNIT - V			
	9	a)	Explain the role of core UI components in Unity. Design how they facilitate the display of dynamic data in an interactive user interface.	CO3	PO3	**10**
		b)	Discuss Unity's event system handles user interactions. Provide an example of a button click event and its implementation.	CO3	PO3	**10**
			OR			
	10	a)	Design a simple inventory system in Unity that displays collected items in a grid layout. Outline the steps and key components used.	CO3	PO3	**10**
		b)	Discuss how animation and transitions are used to enhance the user experience in unity?	CO3	PO3	**10**

KARPPEAR EXAMS 2024-25

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