Reg. No. :

Maximum: 100 Marks

Question Paper Code: U7F02

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Seventh Semester

Computer Science and Design

21UCD702 -VIRTUAL REALITY AND AUGMENTED REALITY

(Regulations 2021)

Duration: Three hours

and computer vision.

	PART A - (10 x 2 = 20 Marks)	
1.	Define augmented reality.	CO1- U
2.	How does augmented reality differ from mixed reality?	CO1- U
3.	What are the key components of a virtual reality system?	CO1- U
4.	Describe the use of virtual reality in gaming.	CO1- U
5.	What are two key characteristics that influence the effectiveness of a 3D input device?	CO1- U
6.	What role do visual displays play in 3D user interfaces?	CO1- U
7.	What are the main challenges faced in outdoor tracking for augmented reality applications?	CO1- U
8.	What is the role of tangible interfaces in enhancing user interaction within augmented reality systems?	CO1- U
9.	What is the role of 3D printing in modern engineering?	CO1- U
10.	Why is data visualization important in the era of big data?	CO1- U
11.	 PART – B (5 x 16= 80 Marks) (a) Explain the concept of multimodal displays in the context of AR. CO1-U Discuss the types of displays used, their requirements and characteristics, and how they impact visual perception in AR systems. 	J (16)
	Or (b) Explain object tracking in the context of augmented reality (AR) CO1-I	J (16)

12. (a) Explain the role of virtual reality in remote collaboration and CO1-U (16) communication

Or

- (b) Describe the importance of 3D modeling in the creation of virtual CO1- U (16) environments and characters
- 13. (a) How would you integrate 3D tracking devices into a virtual CO1-U (16) reality setup to optimize user interaction?

Or

- (b) Explain and design a gesture-based interface to ensure intuitive CO1-U (16) and accurate control in a 3D application.
- 14. (a) Explain how marker tracking works in augmented reality and CO1-U (16) describe a situation where it might be more effective than natural feature tracking.

Or

- (b) Explain how VR can transform educational experiences. What are CO1-U (16) the advantages of using VR in classrooms, and what challenges might educators face when implementing it.
- 15. (a) A school district wants to integrate interactive simulations into its CO2-App (16) science curriculum to enhance student understanding of complex concepts. How would you apply interactive technology to create engaging and educational simulations?

Or

(b) A retail company has collected large amounts of customer CO2-App (16) purchase data and wants to use data visualization to identify buying trends. How would you apply visualization techniques to present this data effectively for strategic decision-making?