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May-2026

B.Sc. (VCMT)-VI SEMESTER

Augmented and Virtual Reality

(B.Sc. VCMT 604-23)

Time : 3 Hours] [Maximum Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART – A

1. (a) Define Augmented Reality (AR). (1.5)

(b) What is a VR Headset? (1.5)

(c) List one difference between VR and Mixed Reality (MR). (1.5)

(d) Name one popular 3D modeling tool. (1.5)

(e) What is "3D Audio"? (1.5)

(f) Define "Environment Creation" in 3D. (1.5)

(g) What is the purpose of storyboarding in VR? (1.5)

(h) Name one motion tracking system. (1.5)

(i) Mention one ethical consideration in AR/VR. (1.5)

(j) Define "Motion Tracking". (1.5)

PART – B

2. (a) Detail the process of creating a 3D environment for a VR simulation. (10)

   (b) What are the best practices for performance optimization in AR? (5)

3. (a) How can developers ensure "User Comfort" and prevent motion sickness in VR? (5)

   (b) Explain the role of spatial audio in 3D environments. (10)

4. Discuss the comparison between AR, VR, and MR in detail. (15)

5. (a) Explain the tools and techniques used for tracking and immersion in VR. (5)

   (b) Discuss the importance of 3D modeling in creating realistic environments. (10)

6. (a) Explain the role of 3D audio in creating a sense of immersion within a virtual environment. (10)

   (b) Describe how spatial audio contributes to user comfort in VR experiences? (5)

7. Discuss the current trends and applications of AR and VR in industries such as education or healthcare. (15)