

Total No. of Questions : 8]

SEAT No. :

P7843

[Total No. of Pages : 2

[6181]-368

B.E. (Artificial Intelligence and Machine Learning)

AUGMENTED REALITY AND VIRTUAL REALITY

(2019 Pattern) (Semester-VII) (Elective-IV) (418545 B)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answers Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data, if necessary.*

Q1) a) Explain concept of perception of depth with suitable diagrams. **[9]**

b) Explain the process for Combining Sources of Information for visual rendering. **[8]**

OR

Q2) a) Explain how concepts of Ray Tracing and Shading differs with suitable applications and eg.? **[8]**

b) What is tracking? Explain 3D tracking system. **[9]**

Q3) a) Enlist various components of Augmented Reality. Differentiate between Augmented Reality and Virtual Reality. **[8]**

b) What is Augmented Reality? What are the real-world applications of Augmented Reality? Explain any three applications in detail. **[9]**

OR

Q4) a) Describe historical developmental phases of Augmented Reality. **[9]**

b) Explain the concept of tracking taking place between rendering virtual contents and real contents. **[8]**

P.T.O.

- Q5) a)** Explain Haptic displays used in Augmented Reality Hardware. How they are different than Visual displays? **[9]**
- b)** Explain the requirements and characteristics for spatial display models.**[9]**

OR

- Q6) a)** Explain the role of processor and processor system architecture in Augmented Reality. **[9]**
- b)** Explain the process of calibration and registration. In what aspects both of them are different? **[9]**
- Q7) a)** Explain programming languages used for AR and VR App development.**[9]**
- b)** Explain applications of VR in Gaming and Entertainment. **[9]**

OR

- Q8) Write short notes on (Any Three):** **[18]**
- a)** VR application development using Unity.
- b)** Legal and social factors in AR application development.
- c)** Sensor Fusion.
- d)** Applications of AR and VR in Defense and Aerospace.

