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Printed Page:-3 **Subject Code:- AMICA0801**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
MCA Integrated
SEM: VIII - THEORY EXAMINATION (2025 - 2026)
Subject: Augmented & Virtual Reality -3D

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

(1.1) Augmented reality overlays digital content on (K2, CO1) 1

(a) Audio world
(b) Virtual world
(c) Text world
(d) Real world

(1.2) Augmented reality is different from virtual reality because (K2, CO1) 1

(a) Only virtual
(b) Uses real world
(c) Both same
(d) None

(1.3) Virtual Reality is mainly used for (K2, CO2) 1

(a) File Storage
(b) Typing practice
(c) Immersive simulation
(d) Spreadsheet editing

(1.4) Virtual Reality replaces (K3, CO2) 1

(a) Real world
(b) Virtual data
(c) Text
(d) File

(1.5) Scene view in Unity is used for (K2, CO3) 1

(a) Playing game
(b) Designing scene
(c) Deleting files
(d) Printing

(1.6) Unity uses which language (K3, CO3) 1

(a) C#
(b) Java
(c) Python
(d) HTML

(1.7) Vuforia Image Target is used for (K2, CO4) 1

(a) Tracking images
(b) Audio playback
(c) File compression
(d) Video editing

(1.8) The platform which supports Vuforia (K2, CO4) 1

(a) Windows
(b) Linux
(c) Android and iOS
(d) DOS

(1.9) Marker-based AR uses (K3, CO5) 1

(a) GPS only
(b) Voice commands
(c) Visual markers
(d) WiFi signals

(1.10) Marker-based tracking requires (K3, CO5) 1

(a) Printer
(b) Microphone
(c) Speaker
(d) Image marker

2. Attempt all parts:-

(2.1) Illustration of working principles of Augmented Reality systems. (K3, CO1) 2

(2.2) Explain stereoscopic vision in Virtual Reality. (K3, CO2) 2

(2.3) Define Project window in Unity. (K2, CO3) 2

(2.4) State the purpose of Vuforia SDK. (K2, CO4) 2

(2.5) Describe localization in Augmented reality. (K3, CO5) 2

SECTION-B 30

Answer any one of the following:-

(3.1) Discuss the working principle of Augmented Reality systems. (K3, CO1) 6

(3.2) Explain the functionality and real-time processing in Augmented Reality. (K3, CO1) 6

Answer any one of the following:-

(3.3)	Analyze the different features of Virtual reality with examples. (K4, CO2)	6
(3.4)	Compare immersive, semi-immersive, and non-immersive VR systems with example.(K4,CO2)	6

Answer any one of the following:-

(3.5)	Describe the functionality of Scene View and Game View in Unity. (K3, CO3)	6
(3.6)	Discuss how Unity handles different file types and resources. (K3, CO3)	6

Answer any one of the following:-

(3.7)	Describe the role of camera in Vuforia-based AR system. (K3, CO4)	6
(3.8)	Discuss the advantages and limitations of Vuforia. (K3, CO4)	6

Answer any one of the following:-

(3.9)	Discuss camera pose in Augmented reality systems. (K3, CO5)	6
(3.10)	Explain the use of Virtual Reality in industrial training and healthcare applications. (K3, CO5)	6

SECTION-C 50

4. Answer any one of the following:-

(4.1)	Explain the working process of Augmented Reality systems step by step. (K3, CO1)	10
(4.2)	Discuss the challenges and limitations of Augmented Reality technology. (K3, CO1)	10

5. Answer any one of the following:-

(5.1)	Discuss the importance of immersion and interaction in Virtual Reality environments. (K4, CO2)	10
(5.2)	Explain the role of input and output devices in Virtual Reality systems. (K4, CO2)	10

6. Answer any one of the following:-

(6.1)	Describe the Transform tool and its components (position, rotation, scale). (K3, CO3)	10
(6.2)	Explain the steps involved in developing a simple Unity project. (K3, CO3)	10

7. Answer any one of the following:-

(7.1)	Explain how image recognition is used in Vuforia. (K3, CO4)	10
(7.2)	Describe the process of importing Vuforia package in Unity. (K3, CO4)	10

8. Answer any one of the following:-

(8.1)	Explain how Augmented reality helps in visualization and interaction. (K4, CO5)	10
(8.2)	Elaborate Advantage and Disadvantage of Virtual Reality.(K4,CO5)	10