

- b. Enumerate the steps for setting up unreal engine environment for a virtual reality application. 12 3 4 1
32. a. Discuss the technological advancement of new era of virtual reality technology through its locomotion tool.. 12 3 5 1
- (OR)
- b. Describe the user interface on the experience developed through Oculus quest. 12 3 5 1

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Reg. No.

**B.Tech. DEGREE EXAMINATION, JUNE 2023**  
Sixth Semester

18CSE304J – BUILDING APPLICATIONS USING OPEN SOURCE  
AUGMENTED REALITY AND VIRTUAL REALITY SDKS  
(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

**Note:**

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40<sup>th</sup> minute.
- (ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours

Max. Marks: 100

**PART – A (20 × 1 = 20 Marks)**

Answer ALL Questions

- |                                                                                                                                                                                                                                                                         | Marks | BL | CO | PO |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|----|
| 1. Which of the following is non-wearable AR device?<br>(A) Helmets (B) Glasses<br>(C) Projectors (D) Head up display                                                                                                                                                   | 1     | 1  | 1  | 1  |
| 2. Which sense is not part of AR setup?<br>(A) GPS (B) Depth<br>(C) Accelerometer (D) Touch                                                                                                                                                                             | 1     | 1  | 1  | 1  |
| 3. Who is the father of Augmented Reality?<br>(A) Steve Mann (B) Brain Sanog<br>(C) John Forest (D) Kevin Warwick                                                                                                                                                       | 1     | 1  | 1  | 1  |
| 4. Which decade saw the debut of augmented reality technology?<br>(A) 1960s (B) 1970s<br>(C) 1980s (D) 2000s                                                                                                                                                            | 1     | 1  | 1  | 1  |
| 5. Which of the following is not a characteristic of virtual reality?<br>(A) Simulates complete or partial real word experience<br>(B) Created mathematically<br>(C) Simulates sense like sight, hearing and touch<br>(D) A disruptive technology with advanced devices | 1     | 1  | 2  | 1  |
| 6. Which of the following is a characteristic of virtual reality?<br>(A) Fully immersive (B) Non interactive<br>(C) Reality (D) Uni-dimensional                                                                                                                         | 1     | 1  | 2  | 1  |
| 7. Which of the following medium cannot enable augmented reality experience?<br>(A) Laptops (B) Smartphones<br>(C) Smart boards (D) Natural environment                                                                                                                 | 1     | 1  | 2  | 1  |
| 8. Which of the following is not used in blender software?<br>(A) C (B) C++<br>(C) C# (D) Python                                                                                                                                                                        | 1     | 1  | 2  | 1  |

9. Vuforia engine does not support \_\_\_\_\_.  
 (A) Hololens (B) Magic leap  
 (C) Aurdino lens (D) Vuzix m400
10. Which of the following is not a use case of vuforia ground plane?  
 (A) Product visualization (B) Design review  
 (C) Games (D) GPS tracking
11. \_\_\_\_\_ face effects can be experienced across all devices including mobile phones, tablets and desktops.  
 (A) 8<sup>th</sup> wall (B) Google lens  
 (C) Holo lens (D) Wiki lens
12. Which of the following is not a process in AR?  
 (A) Data acquisition (B) Data processing  
 (C) Tracking (D) Data encapsulation
13. A student scans an item in real world and their phone tells them what it is. This is an example of \_\_\_\_\_.  
 (A) Augmented reality (B) Virtual reality  
 (C) Extended reality (D) Reality augmentation
14. A headset such as Oculus rift or HTC Vive is an example of \_\_\_\_\_.  
 (A) Augmented reality (B) Virtual reality  
 (C) Extended reality (D) Reality augmentation
15. In augmented reality, a camera scans a \_\_\_\_\_ and then overlays projection.  
 (A) 3D printer (B) VR headset  
 (C) Charger (D) Target image
16. Technology that allows the user to see the real world with virtual objects composited in the real world.  
 (A) AR (B) VR  
 (C) MR (D) ER
17. A tracking based on geolocation information  
 (A) Location based (B) Markerless  
 (C) Marker based (D) GPS
18. SLAM stands for \_\_\_\_\_.  
 (A) Simultaneous localization and mapping (B) System localization and mapping  
 (C) Simultaneous localization and maintenance (D) System localization and maintenance
19. A \_\_\_\_\_ can be recorded using normal light source.  
 (A) Holograph (B) Photograph  
 (C) Holography (D) Isograph

20. What was the first VR Oculus mode?  
 (A) Oculus go (B) Oculus rift  
 (C) Oculus quest (D) Oculus ride

**PART – B (5 × 4 = 20 Marks)**  
 Answer ANY FIVE Questions

21. List the best known applications for augmented reality currently available.
22. Discuss your opinion that augmented reality is mixing up well with entertainment industry?
23. Mention the features of any four types of augmented reality.
24. Outline the hardware and software components required to set up virtual reality system.
25. Point out the main advantages of using unity 3D.
26. Suggest any four tools and editors that developers can use to create 3D applications in unreal engine platform.
27. Discuss the security aspects of Oculus.

**PART – C (5 × 12 = 60 Marks)**  
 Answer ALL Questions

28. a. How augmented reality is believed to revolutionize the healthcare sector?  
 (OR)  
 b. Elaborate the introduction of virtual reality benefiting the defence and military training necessary that could strengthen the nation's security.
29. a. Illustrate the steps for a basic augmented reality scene setup for an application of your choice.  
 (OR)  
 b. What is the use or role of 'assets' integrated in unity and AR foundation packages? Define optical calibration in augmented reality.
30. a. In order to create characters with interesting assets and accessories for a gaming application in virtual reality, suggest the inclusion of vuforia engine in utility by stating its features, need and platform features.  
 (OR)  
 b. Enlist the design steps of any AR application using wiktitude and 8<sup>th</sup> on wall tools.
31. a. Sketch the virtual reality development workflow for constructing an interactive application.