



## Department of Computer Science and Engineering

### Cycle Test - 1

### CSPE 51 – Augmented and Virtual Reality

Date : 08.09.2021

Duration : 1 hour (Test)

Max. Mark : 20

**Instructions:**

1. 1 hour duration for Test and 15 minutes for Submission.
2. Answer all questions.

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1. Determine what type of VR technology is used in the following: (1)



Figure. a



Figure. b

2. Let R be the rectangle whose lower left hand corner is at (3,1) and upper right hand corner is at (5,6). Shear the rectangle about the Y direction with shearing factor of (2,3). (2)
3. Explain the steps involved in transformation of 3D coordinates from Modeling to device coordinates. (2)
4. Is it possible to experience VR in the computer or smart phone without headset? Justify your answer. (2)
5. Determine the 3D objects used in the Figure 1 and 2. (2)

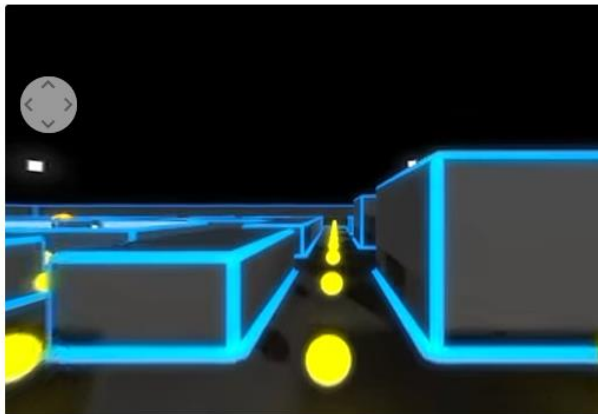
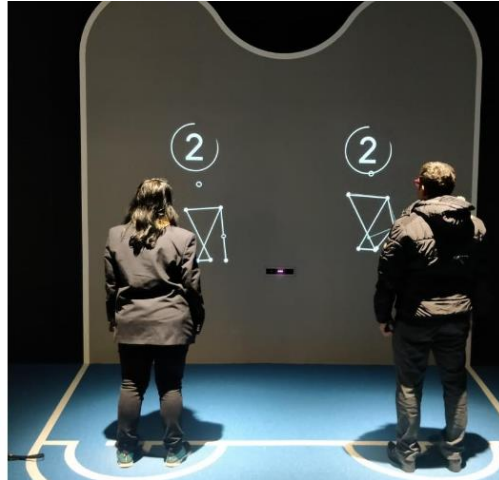


Figure. 1



Figure. 2

6. What kind of tracking system used in the given photo? Justify your answer. (2)



7. Watch the video given in the link [https://www.youtube.com/watch?v=VsUX\\_7aqbU](https://www.youtube.com/watch?v=VsUX_7aqbU)  
Determine the transformation used in the time range given below with object name: (2)
- a) At time 0.48 s to 0.50 s
  - b) At time 1.04 s to 1.06s
8. Which type of display is suitable for the following devices. And also explain why it is appropriate? (2)
- a) Pen Plotter
  - b) Scanner
9. Watch the video provided in the below link and determine the DoF used in it. (2)
- <https://www.youtube.com/watch?v=ljX4770ie80>
10. Check whether the following statement is correct (Provide an example) (3)
- “Reflection of line about Y-axis and then reflecting the reflected object about the diagonal line  $y = -x$  is same as that of rotation about 270 degrees in anti-clockwise direction”.