

Course No: **MUL 4318**  
Course Title: **Virtual Reality (VR)**  
Date: **Monday 12/1/2015**  
No. of Questions: ( **6** )  
Time: **2 Hours**  
Total Grade: ( **50** ) Marks

University of Palestine



**Final Exam**  
**1<sup>st</sup> Semester 2014/2015**

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**ANSWER ALL QUESTIONS**

**Question 1:** There are several components of a virtual environment which include: Virtual Objects, Virtual Lights, Animation, Physical Simulation, Level of detail, and Collision Detection. **Discuss with examples three of them only.** (6 Marks, 2 for each),

1.

2.

3.

**Question 2:** Explain the following virtual reality issues: (6 Marks, 3 for each)

1. Image Based

## 2. Fully-immersive

**Question 3: Explain the utilizing of training through VR technology. (5 Marks)**

**Question 4: Identify which statement is True and which is False.** You have to put your final answers in the table below. (10 Marks, 1 for each)

1	2	3	4	5	6	7	8	9	10

1. \_\_\_\_\_ Plug-ins is not required to view VRML.
2. \_\_\_\_\_ Immersive VR does not require any devices to be attached to the body.
3. \_\_\_\_\_ VR software needs to allow for navigation and interaction within the 2D/3D world.
4. \_\_\_\_\_ VR is a high-end user-computer interface include only visual, auditory, and tactile.
5. \_\_\_\_\_ With VR trainees can train by interacting with virtual materials similarly to the ways they would interact with real materials.
6. \_\_\_\_\_ Distance, size, velocity, and eccentricity are issues that very important to implement LOD.
7. \_\_\_\_\_ VRML contains a number of features such as hierarchical transformations, light sources, viewpoints, geometry, animation, fog, material properties, and texture mapping.
8. \_\_\_\_\_ Cylindrical Panorama is one of Image Based types.

9. \_\_\_\_\_ The continuous decrease of the costs and the increasing capabilities of the VR technology have slowly increased its penetration.
10. \_\_\_\_\_ Lighting is a secondary component in illuminating the VE so that users are able to see the virtual objects properly.

**Question 6: Choose the correct answer of the following statements.** You have to put your final answers in the table below. (10 Marks, 1 for each)

1	2	3	4	5	6	7	8	9	10

- \_\_\_\_\_ is an important tool for maintaining a highly interaction.
  - Level of Details
  - Animation
  - Modeling
  - Lighting
- \_\_\_\_\_ is a VR movies can be viewed with an Internet browser when the proper plug-in viewer has been installed.
  - Image based
  - Online
  - Answer 1 & 2
  - None of above
- Consideration issues in VR image based comprises \_\_\_\_\_.
  - Hotspots
  - Virtual Tours
  - Viewers
  - All of above
- \_\_\_\_\_ can provide opportunities for new kinds of experience, enabling users to interact with objects and navigate in 3D space in ways not possible in physical environments.
  - Physical environments
  - Virtual environments
  - Answer 1 & 2
  - None of above
- \_\_\_\_\_ characteristic of virtual reality enhances the engagement of the user in the virtual environment by acting and reacting users in the virtual world.
  - Interactive
  - Modeling
  - Answer 1 & 2
  - Lighting
- \_\_\_\_\_ VR benefits comprises.
  - What-if scenarios
  - Improved quality of life
  - Answer 1 & 2
  - None of above
- \_\_\_\_\_ are programming libraries that provide a set of VR functions and scripts.
  - VRML
  - VR SDKs
  - Answer 1 & 2
  - None of above

8. \_\_\_\_\_ are programming libraries that provide a set of common VR functions.

- ① VRML
- ② VR SDKs
- ③ Quest 3D
- ④ Answer 1 & 3

9. Virtual \_\_\_\_\_ is the use of VR techniques to reconstruct historical monuments, prehistoric settlements, early military fortifications, and medieval cities.

- ① Training
- ② Heritage
- ③ Online tourism
- ④ None of above

10. VR sensation is referred to as \_\_\_\_\_.

- ① Engagement
- ② Immersion
- ③ Presence
- ④ All of above

**Question 5: Answer the following Questions: (13 Marks)**

**(a) List six (6) appropriate areas to develop VR applications: (3 Marks, ½ for each)**

**(b) What are the advantages/benefits of VR. List 5? (5Marks)**

**(c) There are three kinds of relationship between Virtual Environments and Physical Environments. List them and give an example for each. (3 Marks, 1 for each)**

**(d) What is Augmented Reality? (2Marks)**

===== BEST WISHES =====