UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024

COURSE NAME	:	VIRTUAL REALITY
COURSE CODE	:	BIM 30803
PROGRAMME CODE	:	BIM
EXAMINATION DATE	:	JULY 2024
DURATION	:	3 HOURS
INSTRUCTIONS	:	1. ANSWER ALL QUESTIONS

2. THIS TEST IS CONDUCTED VIA
   ☐ Open book
   ☒ Closed book
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

Q1 (a) What are the TWO (2) basic process that influence us in perceiving reality? Describe each process in detail.

(8 marks)

(b) **FIVE (5)** major senses play a crucial role in gathering information for human perception. Provide a brief overview of the function of each sense.

(10 marks)

(c) When it comes to visualizing content, various technologies and methods are utilized to create an engaging Virtual Reality (VR) experience. Select any **TWO (2)** of the technologies and describe each of these technologies in detail.

(4 marks)

Q2 (a) Sound plays a crucial role in enhancing the realism of virtual environment. Discuss **THREE (3)** different roles of sound in a Virtual Reality system.

(9 marks)

(b) Give **THREE (3)** coordinates from which a sound can be localized.

(3 marks)

(c) Differentiate between 3-DOF and 6-DOF in haptic rendering.

(4 marks)

(d) Explain **TWO (2)** types of haptic interfaces.

(6 marks)

Q3 The sense of taste is the result of a complex interaction between multiple sensory mechanisms. The taste sensation is produced when a substance in the mouth reacts chemically with taste receptor cells. Taste interfaces are still relatively unexplored areas compared to other sensory interfaces like sight or sound.

(a) Explain the concept of taste interfaces and provide examples of **TWO (2)** different taste interfaces.

(10 marks)

(b) Discuss the potential of taste interfaces in creating a more immersive virtual experience.

(10 marks)

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Q4 (a) Explain the concept of Mixed Reality. Discuss the **THREE (3)** main categories of Mixed Reality.

(8 marks)

(b) Discuss why markerless tracking is not as widely used as edge-based and marker-based tracking?

(8 marks)

- END OF QUESTIONS -

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