UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2018/2019

COURSE NAME	:	VIRTUAL REALITY
COURSE CODE	:	BIM 30803
PROGRAMME CODE	:	BIM
EXAMINATION DATE	:	DECEMBER 2018 / JANUARY 2019
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS ANSWER SCHEME CONSISTS OF **THREE (3)** PAGES

Q1 (a) Sketch a new orientation of virtual observer (VO) using XYZ fixed angles method, if the following conditions are given:

roll = 180^0 , pitch = 90^0 , yaw = 90^0

$(t_x, t_y, t_z) = (1,2,5)$

(13 marks)

(b) Calculate P′, if the coordinate of P is (0,1,1).

(10 marks)

Q2 Analyze the following scenario:

If a VO is oriented in a VE using XYZ Euler angles in the sequence roll, pitch, yaw and translate with the following values roll = -180^0, pitch = 270^0 and yaw = 90^0; (t_x, t_y, t_z) = (2,1,3).

(a) Sketch a new orientation of VO.

(12 marks)

(b) Prove that the coordinate of P′ corresponds to P if the coordinate P is (1,1,1). Show your working.

(12 marks)

Q3 XYZ Fixed angles and XYZ Euler angles would produce the same VO orientation if were subjected to the same rotation. How can it be achieved? Prove your answer using the following rotation:

roll = -90^0

pitch = 90^0

yaw = -90^0

(10 marks)

Q4 (a) Give **THREE (3)** characteristics of the given objects which represent their character.

(6 marks)

(i)

(ii)

(b) Explain **THREE (3)** ways of interacting with a virtual world.

(9 marks)

Q5 (a) Explain **TWO (2)** roles of sound in a virtual reality system.

(4 marks)

(b) Give **ONE (1)** example each for your answers in **Q5(a)**.

(4 marks)

- END OF QUESTION -