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UNIVERSITY OF COLOMBO, SRI LANKA

15 MAR 2022

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

BACHELOR OF SCIENCE HONOURS IN COMPUTER SCIENCE
BACHELOR OF SCIENCE HONOURS IN SOFTWARE ENGINEERING
BACHELOR OF SCIENCE HONOURS IN INFORMATION SYSTEMS
BACHELOR OF SCIENCE IN COMPUTER SCIENCE
BACHELOR OF SCIENCE IN INFORMATION SYSTEMS

Academic Year 2020/2021 - Second Year Examination - Semester I - 2021

SCS3213/IS3112- Game Development

TWO (2) HOURS



To be completed by the candidat	е				
Examination Index No:					

Important Instructions to candidates:

- 1. Students should answer in the medium of **English language only** using the space provided in this question paper.
- 2. Note that questions appear on both sides of the paper. If a page or a part of this question paper is not printed, please inform the supervisor immediately.
- 3. Write your index number **CLEARLY** on each and every page of this Question paper.
- 4. This paper consists of 4 questions in 13 pages (including the Cover Page).
- 5. Answer ALL questions.
- Programmable Calculators and any electronic device capable of storing and retrieving text including electronic dictionaries, smart watches and mobile phones are not allowed.
- 7. Non-Programmable calculators are not allowed.
- 8. Do not tear off any part of this answer book. Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.

For	Examiner's	use	only

Question No	Marks
1	
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Total	

21

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l	Index No.					
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Q1.	A.	Briefly explain the differences between <i>Serious Games, Casual Games</i> a <i>Hardcore Games</i> .	
		ANSWER BOX	(06 marks)
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		Index No.
Q1.	B.	Briefly explain the benefits of using scene-graph data structure in interactive 3D graphics applications. (05 marks) ANSWER BOX
Q1.	C.	Draw a scene-graph for a simplified motorcycle. Sketch the model and show the correspondence between the scene-graph nodes and your model. State any assumptions made. (08 marks) ANSWER BOX

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Q1.	D.	List four (4) type	s ot lay	<i>outs</i> u	sed in	game c	design.	Use ap	propri	ate illu	strations in
		your answer.									
											(06 marks)
		ANSWER BOX									

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		5.6.1.						Personal Basic Product Association			
Q2.	Α.	Briefly describe th technology.	iree (U:	3) diffe	rences	betwee	en <i>Web</i>	AR an	d <i>App-i</i>	based-A	AR
				1							(06 marks)
		ANSWER BOX									

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Q2.	В.	Briefly explain how				ıx Algo	rithm c	an deci	ide nex	t move	s when the
		full tree is impossib	ole (e.g	. chess).						(04 marks)
	Į	ANSWER BOX									(U4 IIIai K5)
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		Index No.									
Q2.	C.	What is sense-thi	nk-act (cycle in	progra	ımming	gagent	s, in a g	game?		
		ANSWER BOX									(05 marks)
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Q2.	D.	Briefly describe a	hout El	ockina	in rolat	od to r	novom	ont	g allestroman farring for source for the group code	no Militare de la coltación de additionad de facilitat	
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		ANSWER BOX									
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Q2.	E.	Briefly explain ho	w vou	can use	e AirSin	n plugir	າ with ໄ	Jnreal (Game E	Engine 1	or
		autonomous droi				, 0				J	(05 marks)
		ANSWER BOX									(OS marks)
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Q3.	Α.	Name three (03)	main W	/indows in <i>Un</i>	ity Eng	ine Inte	rface.			
		ANGUER								(03 marks)
		ANSWER BOX								
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Q3.	В.	What is the differe	ence be	tween <i>Perspe</i>	ctive C	amera	and <i>Or</i>	thogra	phic Cai	mera in
		Three.js?								(06 marks)
		ANSWER BOX				······································				(00 marks)
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Q3.	C.	Unity and Unreal are two of the most popular Game Engines. Name four (4) other
		Game Engines.
		(04 marks)
		ANSWER BOX
Q3.	D.	Games are multimedia applications by nature and digital assets' source data must
	1	be created and manipulated by artists using digital content creation (DCC)
		applications. List four (4) DCC tools and their use.
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		(06 marks)
	Ì	ANSWER BOX
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Q3.	Ε.	Brie Des	fly explai ign. Use a	n fo n ap	ur (4) propria	differe ate illus	nt inte	raction in you	patte r answ	rns tha	it can	be use	d in Game
		ANS	WER BO	<u> </u>						* *			(Co marks)
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An according to the accord						·							
Q4.	A.	Stat	e three (3) cod	ordinat	e syste	ms use	d in Co	mpute	r Graph	nics ap	plicatio	ns. (03 marks)
		ANS	WER BOX	<u>(</u>	,								(U3 IIIai K5)
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Q4.	В.	Briefly explain what is meant by Gimbal Lock.								(04 marks)	
		ANS	WER BOX				2.00				(0-11101103)
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Q4.	C.		fly explain wh	at is m	eant b	y Fragn	nent Sh	ader.			[05 Marks]
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Q4.	D.	State two (02) <i>Fragment Shader</i> operations.	[04 Marks]
		ANCIAIED DOV	[0-4 IAIGI K2]
		ANSWER BOX	
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Q4.	E.	Explain what is meant by Rasterization using the OpenGL pipeline.	
			(04 marks)
		ANSWER BOX	

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Q4.	F.	Leap Motion controller is one of the widely used in the game industry. Briefly explain the difference between Leap Motion controller and Orbbec device.								
		(05 marks)								
		ANSWER BOX								
