FINAL EXAMINATION
FIRST SEMESTER SESSION 2011/2012

COURSE CODE / NAME : STIV2023 COMPUTER GRAPHICS AND ANIMATION
DATE : 02 JANUARY 2012 (MONDAY)
TIME : 8.30 P.M. – 11.00 P.M. (2 ½ HOURS)
VENUE : DSB K. MAS

INSTRUCTION :

1. This exam paper contains TWENTY NINE (29) questions in FIFTEEN (15) printed pages, excluding the cover page.
2. Answer ALL QUESTIONS on the space provided.
3. You are NOT ALLOWED to remove the question booklet from the examination hall.

MATRIC NO : ____________________________  __________________________________
( in words ) ( in numbers )
IDENTIFICATION CARD NO. :

LECTURER : ____________________________

GROUP : [ ] TABLE NO. : _______________

DO NOT OPEN THIS EXAMINATION PAPER UNTIL INSTRUCTED

CONFIDENTIAL
1. Define these terminologies:
   a) Computer graphic
      (2 marks)
   b) Interactive computer graphic
      (2 marks)
   c) Animation
      (2 marks)

2. Compare between raster and vector images in terms of characteristics.
   a) Raster
      (2 marks)
   b) Vector
      (2 marks)
3. List THREE (3) common logistic issues during digital production process. (3 marks)

4. What are the responsibilities of creative and production teams?

   a) Creative team (1 mark)

   b) Production team (1 mark)

5. What is proprietary software? (2 marks)

6. Name THREE (3) 3D production stages and briefly describe THREE (3) activities under each production. (9 marks)

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7. How to show a 3D world out of a 2D image? (2 marks)

8. How does the retina cast the picture below? (1 mark)

<table>
<thead>
<tr>
<th>Real object</th>
<th>Casted object</th>
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<tbody>
<tr>
<td><img src="image" alt="Tree Image" /></td>
<td></td>
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</table>

9. Give ONE (1) scenario which represents motion parallax. (2 marks)

10. Why stereo vision is important to human being? (2 marks)
11. What is amblyopia? (2 marks)

12. Give THREE (3) actions that rely heavily on stereo vision (3 marks)

13. Define these terminologies in 3D environment:
   a) Point (1 mark)
   b) Line (1 mark)
c) Edge (1 mark)

d) Surface (1 mark)

14. Differentiate between global and local transformation of an object.
   a) Global transformation (2 marks)

   b) Local transformation (2 marks)

15. State the following navigations terminologies:
   a) Boom (1 mark)

   b) Tuck (1 mark)
c) Tilt (pitch)  

(1 mark)

d) Roll  

(1 mark)

16. Explain what are free-form curved surfaces?  

(3 marks)

17. What are the minimum number of curves to make patches and how to make complex free-form surfaces?  

(2 marks)

18. Briefly explain about Skinning technique in Free-form Curved Surfaces.  

(3 marks)
19. What is Photogrammetry? (4 marks)

20. Identify and explain FOUR (4) types of 3D animation. (8 marks)
21. Explain the following units of animation.

   a) Frame (1 mark)

   b) Still Frame (1 mark)

   c) 30 frames (1 mark)

   d) FPS (1 mark)

   e) Sequence (1 mark)

   f) Scene (1 mark)

   g) Shot (1 mark)
22. Based on the diagram below, answer the following questions:

![Diagram](image)

a) Name the animation technique 

(1 mark)

b) How to implement this technique? 

(2 marks)
23. Based on the diagram below, answer the following questions:

![Diagram of two people playing football](image)

a) Name the animation technique  
   (1 mark)

b) How to implement this technique?  
   (2 marks)
24. The following steps are the processes in computer animation.

```
GET MODEL
  ↓
PLACE CAMERA
  ↓
DEFINE LIGHT SOURCES
  ↓
DEFINE SURFACE CHARACTERISTICS
  ↓
CHOOSE SHADING TECHNIQUE
  ↓
STEP Y
  ↓
SAVE FILE AND OUTPUT
```

a) What is STEP Y? (1 mark)
b) List and explain FIVE (5) techniques on STEP Y. (10 marks)
25. Name the extended primitive objects in below: 

(1 mark)

Answer:

26. Name a type of modifier applied based on the following change.

(1 mark)

Answer:
27. Name the type of modifier applied based on the following change.  

Answer:

28. Name the type of modifier applied based on the following change.  

Answer:
The following diagram shows the effect of Boolean operation. Underline the correct operation of each effect.

(2 marks)

**Position of Original Objects**

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**END OF QUESTION**