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University Examinations 2024/2025

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE BACHELOR OF
SCIENCE IN INFORMATION TECHNOLOGY

CIT 3404: COMPUTER ANIMATION

DATE: JANUARY 2025

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Discuss in detail the purpose of pose-to-pose animation when creating an animation. [4 marks]
- ii. Use a diagram to illustrate a fine example of working-rough to get key poses sorted that describe an action in an expressive manner. [4 marks]
- iii. Describe stop-motion-animation and where this type of animation is used. [4 marks]
- b) Explain how the following animation aspects are applied in creating animations. [6 marks]
- i. Colour and texture
- ii. Shape
- c) i. Discuss the importance of pixilation in stop-motion animation. [4 marks]
- ii. Differentiate between 2D animation and 3D animation. [4 marks]
- d) Using physics based models, explain forward dynamics and inverse dynamics. [4 marks]

QUESTION TWO (20 MARKS)

- a) Explain the following types of animation controls: [6 marks]
- i) Explicitly declared control
 - ii) Live action / analyzing control
 - iii) Facial animation control
- b) Describe in detail the aspects of squash and stretch as one of the 12 principles of animation by highlighting the main benefits of squash and stretch. Use a diagram to explain the answer. [6 marks]
- c) Explain how anticipation is used to improve the representation of weight and other forces to draw attention to main action. Use an example to explain your answer. [8 marks]

QUESTION THREE (20 MARKS)

- a) Differentiate between cell animation and path animation. [5 marks]
- b) Explain the basic workflow that a rigger follows to organize and create a control rig for any object. [7 marks]
- c) Explain the purpose of staging in animation highlighting the benefits and environment necessary for staging to be successful. [8 marks]

QUESTION FOUR (20 MARKS)

- a) Explain the following terms as used in animation: [6 marks]
- i) Sequence.
 - ii) Shot.
 - iii) Frame.
- b) Compare and contrast between character animation and effects animation. [4 marks]
- c) Explain why animation fails. [5 marks]
- d) Discuss any area where animation is applied in business and the benefits gained by using animation in the selected area of application. [5 marks]

QUESTION FIVE (20 MARKS)

- a) Briefly explain the following techniques used in computer animation: [6 marks]
- i. Rendering.
 - ii. Morphing and warping.
 - iii. Squash and Stretch
- b) Use a diagram to describe the slow in and slow out principle using:
- i. Interpolation curves. [3 marks]
 - ii. Frame by frame elements [3 marks]
- c) One method of creating an animation is to write a program in a standard programming language and call graphics library functions as needed to create the animation. Describe three other methods of creating animations, giving an advantage and a disadvantage of each approach. [8 marks]