



B O A R D O F S T U D I E S
NEW SOUTH WALES

2012

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Industrial Technology

Multimedia Technologies

General Instructions

- Reading time – 5 minutes
- Working time – $1\frac{1}{2}$ hours
- Write using black or blue pen
Black pen is preferred
- Draw diagrams using pencil
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of page 5

Total marks – 40

Section I Pages 2–4

10 marks

- Attempt Questions 1–10
- Allow about 20 minutes for this section

Section II Pages 5–7

15 marks

- Attempt Questions 11–13
- Allow about 35 minutes for this section

Section III Page 9

15 marks

- Attempt Question 14
- Allow about 35 minutes for this section

Section I

10 marks

Attempt Questions 1–10

Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.

- 1 What are used to quickly view multiple images?
 - (A) Animated GIFs
 - (B) JPEGs
 - (C) PDF files
 - (D) Thumbnails

- 2 What process is used to reduce the jagged edge created when enlarging a bit-mapped graphic?
 - (A) Animating
 - (B) Anti-aliasing
 - (C) Grouping
 - (D) Pixelisation

- 3 In what units are sampling rates for audio files measured?
 - (A) Bits
 - (B) Bytes
 - (C) Hertz
 - (D) Megabits per second

- 4 Which file format is characterised by lossless compression?
 - (A) AVI
 - (B) GIF
 - (C) MPEG
 - (D) MP4

- 5 Which of the following statements is correct in relation to a bit-mapped image?
- (A) The image is represented as individual pixels.
 - (B) The image size may be increased without loss of clarity.
 - (C) Each portion of the image is represented mathematically.
 - (D) The file size is not increased as a consequence of increasing the image size.
- 6 Which process generates intermediate frames between two animated images?
- (A) Cel-based animation
 - (B) Path-based animation
 - (C) Tweening
 - (D) Warping
- 7 How many frames per second are most commonly used to record video?
- (A) 12
 - (B) 24
 - (C) 36
 - (D) 48
- 8 The formula for calculating the file size (in kB) of a graphic is

$$\text{File size} = \frac{\text{horizontal pixels} \times \text{vertical pixels} \times \text{colour depth}}{8 \times 1024} .$$

A given image has 250 pixels horizontally and 200 pixels vertically and its colour depth is 8.

What is the approximate size of the image?

- (A) 4.9 kB
- (B) 49 kB
- (C) 490 kB
- (D) 4900 kB

- 9 What number of colours may be stored in a pixel of a graphic that has a colour depth of 8?
- (A) 8
 - (B) 16
 - (C) 64
 - (D) 256

10 The following files need to be stored on a hard drive.

- Twenty-five video files with an average size of 800 MB
- One hundred audio files with an average size of 4.8 MB
- One hundred graphics files with an average size of 200 kB

What is the minimum storage requirement for these files?

- (A) 15 GB
- (B) 20 GB
- (C) 25 GB
- (D) 30 GB



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Centre Number

Section II

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Student Number

15 marks

Attempt Questions 11–13

Allow about 35 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Question 11 (2 marks)

Identify TWO special effects that may be used in video production.

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Question 12 (3 marks)

Describe factors that can affect the legibility of text in an electronic presentation.

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Question 13 (10 marks)

A multimedia company has been commissioned to develop a promotional video for a famous tourist attraction.

- (a) Outline factors that can affect sound quality when creating the video. **3**

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- (b) Identify and describe a video transfer protocol that may be used to download the video from a website. **3**

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Question 13 continues on page 7

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Section III

15 marks

Attempt Question 14

Allow about 35 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Question 14 (15 marks)

A company is considering expanding its operations to take advantage of new and emerging web-based technologies.

- (a) Describe a range of web-based technologies the company could use to market and sell its goods and/or services. **5**

- (b) Describe the possible impact on both the work practices and the organisation of the company if web-based technologies were implemented. **10**

End of paper

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