

2011

**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 Question 11
- Allow about 35 minutes for this section

Section III Page 9

15 marks

- Attempt Question 12
- 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** Which keyboard key can be pressed to create an indent in a body of text?

 - (A) Esc
 - (B) Tab
 - (C) Alt
 - (D) Enter/Return

- 2** What is the advantage of using vector graphics in the creation of a digital image?

 - (A) Vector graphics are widely accepted across all graphics software.
 - (B) Vector graphics allow for the production of photorealistic images.
 - (C) Vector graphics allow for precise images to be rescaled without distortion.
 - (D) Vector graphics allow for the manual manipulation of every individual pixel in a graphic.

- 3** Which of the following video cameras is an example of an analogue video device?

 - (A) A flash drive camcorder
 - (B) A hard disk drive camcorder
 - (C) A Hi-8 video tape camcorder
 - (D) A digital versatile disk camcorder

- 4** Which statement best describes the purpose of RAM (Random Access Memory)?

 - (A) RAM is hardware used to process data.
 - (B) RAM is hardware used to speed up the whole computer system.
 - (C) RAM is hardware used to permanently store files for later access.
 - (D) RAM is hardware used to temporarily hold files for fast access while in use.

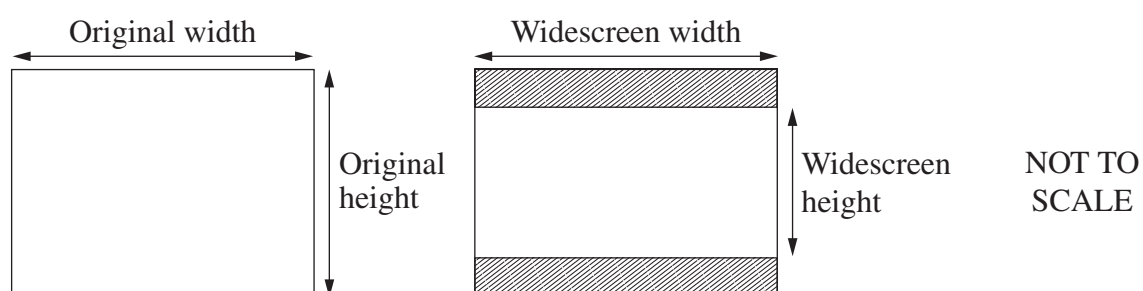
- 5 The formula used to determine the bit rate of a digital sound file in kbits/s is as follows:

$$\text{Bit rate} = (\text{sampling rate}) \times (\text{bit depth}) \times (\text{number of channels})$$

What would be the file size of a sound file that is recorded at 100 kHz at a 16-bit depth in stereo and is 15 seconds in duration?

- (A) 3 MB
 - (B) 4 MB
 - (C) 5 MB
 - (D) 6 MB
- 6 Which of the following only includes types of text files?
- (A) doc, pdf, txt
 - (B) doc, jpg, ocr
 - (C) html, avi, css
 - (D) html, rtf, wav
- 7 Which of the following is the best way to ensure consistency in the design of a web page?
- (A) The use of shockwave files
 - (B) The use of cascading style sheets
 - (C) The use of hypertext markup language
 - (D) The use of hypertext transfer protocols
- 8 Which of the following best describes a *transition*?
- (A) A filter effect applied to a video clip
 - (B) A change to the speed a clip is played at
 - (C) An effect applied between two video clips
 - (D) A layering of one clip over the top of another clip

- 9 What is the most likely reason for a video file not playing in a media player on a computer?
- (A) The video frame rate is too fast.
 - (B) The computer monitor is not the right size.
 - (C) The computer graphics processing unit (GPU) is not fast enough.
 - (D) The computer software does not support the video file-type.
- 10 Letterboxing is a common technique to change the ratio of video footage captured at a 4:3 standard format to a 16:9 widescreen format. This is achieved by blacking out portions of the display area with black bands as illustrated below.



A standard 4:3 video with a resolution of 800×600 is letterboxed to a 16:9 widescreen format.

How many pixels make up the widescreen height?

- (A) 450
- (B) 475
- (C) 500
- (D) 525

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Centre Number

Section II

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Student Number

15 marks

Attempt Question 11

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 (15 marks)

A multimedia company has been contracted to create an interactive computer application to help train learner drivers.

- (a) Suggest suitable font formatting options that can be used to highlight headings in the application. **2**

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- (b) How does colour bit-depth affect the quality of graphics used in the application? **2**

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Question 11 continues on page 6

Question 11 (continued)

- (c) A video was produced to demonstrate a variety of traffic conditions that a driver may encounter. Some of the clips appear too light and more yellow than the rest of the footage. **3**

Describe editing techniques that could be used to make these clips match the rest of the footage.

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- (d) To demonstrate the effects of speed in a crash, the company is using motion capture technology on crash-test dummies. **4**

Explain why the company would use motion capture techniques to create a 3D crash-test animation.

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Question 11 continues on page 7

Question 11 (continued)

- (e) A library of real traffic sounds was recorded for use in the Learner Driver application.

4

How are the analogue sounds converted into digital sound files? You may use a diagram to support your answer.

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End of Question 11

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Section III

15 marks

Attempt Question 12

Allow about 35 minutes for this section

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

Question 12 (15 marks)

A company is expanding its operations by establishing an interstate facility.

- | | | |
|-----|---|-----------|
| (a) | Describe personnel issues the company needs to consider when staffing the new facility. | 5 |
| (b) | Analyse factors, other than personnel issues, that could affect the viability of the company at the new location. | 10 |

End of paper

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