



### Higher National Diploma in Information Technology

First Year, Second Semester Examination – 2015

**IT2002/HNDIT1210 – Graphics and Multimedia**

Instructions for Candidates:

No. of questions: 06

Answer five questions.

No. of pages : 04

All question carry equal marks

Time : 03 hrs.

Question number 04 part A for candidates registered in 2015 academic year and part B for other candidate

#### Question 01

**[Total Marks 20]**

- (i.) Define the term multimedia. [02 Marks]
- (ii.) Give four building blocks of Multimedia Application. [02 Marks]
- (iii.) Briefly explain followings. [08 Marks]
  - a. Integration
  - b. Interactive
  - c. Hypermedia
  - d. Hypertext
- (iv.) Give four Characteristics of Multimedia System [04 Marks]
- (v.) Briefly explain the usefulness of multimedia in business application [04 Marks]

#### Question 02

**[Total Marks 20]**

- (i.) What is meant by computer graphic and give two examples [04 marks]
- (ii.) Write two usages of vector image [04 marks]
- (iii.) Write three Advantages of vector graphics over the raster graphics [03 marks]
- (iv.)
  - a. “Compressing bitmap images is more important than compressing vector images.“ Do you agree with this statement? Explain the reason for your answer. [03 Marks]
  - b. Size of a bitmap image is expressed in bytes. This value depends on two factors. What are they? [04 Marks]
  - c. Mention two advantages of compressing image files before uploading to a web page. [02 Marks]

**Question 03****[Total Marks 20]**

- |   |   |                  |
|---|---|------------------|
| (i)   | What is Audio?  | [04 Marks]       |
| (ii)  | Explain term “Digitization“   | [03 Marks]       |
| A stereo song has to be recorded at CD quality (Settings for CD quality are:<br>Sampling frequency = 44100 Hz (44.1 KHz) and Sampling depth = 16 bit). The song<br>is 4 minutes and 8 seconds long. How much disk space would the captured song<br>occupy? [hint: File size (bits) = sampling frequency (Hz) x sampling depth (bits) x length<br>of sound (s) x channels] |   |                  |
|   |   | [03 Marks]       |
| (iii)   | What is the difference between MIDI file and digital audio file               | [04 Marks]       |
| (iv)  | Breifly explain the following file formats. For each format mention its uses. |                  |
| a.  | JPEG  |                  |
| b.  | GIF   | [03X2= 06 Marks] |

**Question 04****[Total Marks 20]**

(i)

**Part A**

- a. What is the difference between primary color and secondary color? [03 Marks]
- b. Mention the primary colors in subtractive color theory. [04 Marks]
- c. Mention two places where additive color theory is used. [02 Marks]
- d. What is the color depth of a “full color“ image? [01 Marks]

**Part B**

- a. What is “Animation“? [04 Marks]
- b. Briefly explain any three of following animation techniques [06 Marks]
  - a. Squash and stretch
  - b. Anticipation
  - c. Follow through and overlapping action
  - d. Slow in and slow out
  - e. Exaggeration

- (ii) Briefly explain the followings
- a. Cell animation [02 Marks]
  - b. Parametric animation [03 Marks]
  - c. Motion capture animation [03 Marks]
- (iii) What is storyboard layout? [02 Marks]

**Question 05** [Total Marks 20]

- 1) What is image file compression? Why is it important in present era? [04 Marks]
- 2) Write the names of compression types with relevant algorithms. [04 Marks]
- 3) State one (01) human eye characteristic which is used with color space compression? [02 Marks]
- 4) The following binary image is encoded using run length coding in row by row, with “0” represents white, and “1” represents black. Decode the image and draw it.

Row 1: “0” , 16  
 Row 2: “0” , 5, 6, 5  
 Row 3: “0” , 3, 10, 3  
 Row 4: “0” , 3, 10, 3  
 Row 5: “0” , 3, 1, 8, 1, 3  
 Row 6: “0” , 3, 1, 8, 1, 3  
 Row 7: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 8: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 9: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 10: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 11: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 12: “0” , 3, 1, 2, 4, 2, 1, 3  
 Row 13: “0” , 3, 10, 3  
 Row 14: “0” , 3, 10, 3  
 Row 15: “0” , 2, 12, 2  
 Row 16: “0” , 1, 14, 1

[10 Marks]

**Question 06****[Total Marks 20]**

- a) What are the available methods for Multimedia Delivery? [02 Marks]
- b) Give two (2) testing methods used before the multimedia delivery. Briefly explain it [08 Marks]
- c) What are the factors you have to consider when you are creating and delivering the multimedia [04 Marks]
- d) Only answer part (a) or part (b)**
  - a. Give three categories of typeface with one application for each. [06 Marks]
  - b. Briefly explain three video broadcasting standards [06 Marks]