

INSTITUTE OF TECHNOLOGY BLANCHARDSTOWN

Year	Year 2
Semester	Semester 1
Date of Examination	Monday 12 th January 2009
Time of Examination	9.30am – 11.30am

Prog Code	BN002	Prog Title	Higher Certificate in Science in Computing in Information Technology	Module Code	COMP H2011
Prog Code	BN013	Prog Title	Bachelor of Science in Computing in Information Technology	Module Code	COMP H2011
Prog Code	BN104	Prog Title	Bachelor of Science (Honours) in Computing	Module Code	COMP H2011

Module Title	GUI Programming
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External Examiner(s): Mr John Dunnion
Dr. Richard Studdert

Instructions to candidates:

- 1) To ensure that you take the correct examination, please check that the module and programme which you are following is listed in the tables above.
- 2) Answer question 1 and two other questions.
- 3) Question 1 is worth 40 marks. Questions 2, 3 and 4 are worth 30 marks each.

DO NOT TURN OVER THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Question 1

Attempt any 8 parts of this question. (5 marks each)

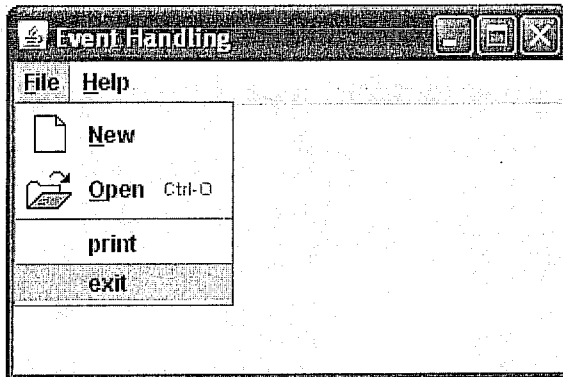
a)	Explain the relationship between a frame and a panel . Illustrate with a diagram .
b)	Outline five heuristics for good interface design.
c)	Distinguish between the border and flow managers.
d)	Complete the following Java code for handling events for a button component: i. implements _____ ii. button.add _____ iii. Event Handling Method Name
e)	Write a single line of JAVA code which draws a rectangle , 5 x 10 pixels in size at x,y coordinates 20,30.
f)	In an existing Java code segment a label called myButton is declared. Write the code to include an icon on the label called bug1.gif .
g)	Explain the purpose of JInternalFrame . Illustrate, with the use of a diagram .
h)	Explain the purpose of the addSeparator() method.
i)	Explain the relationship between AWT and SWING .
j)	State whether each of the following is true or false . i. In the Java coordinate system, y values increase from top to bottom. ii. The drawLine method draws a line between two points. iii. The fillArc method uses degrees to specify the angle. iv. The drawCircle method draws a circle. v. The fillRect method draws a solid rectangle.

[Total 40 marks]

Candidates should attempt any 2 of the following 3 questions

Question 2

Write Java code to create the following **menu**, with reference to the screen shot below:



a) Create a menu bar containing a **File** and **Help** menu.

b) Set the **title** of the window to "Event Handling".

(5 marks)

c) Add the following to the file menu:

- Create **New** and **Open** menu items including **icons** and **actionlisteners**
- Add a **separator** to the file menu
- Add **print** and **exit** menu items

(12 marks)

d) Add the following to the **Help** menu:

- Create **Software** and **HardWare** menu items
- Create a **sub menu** from the Software sub menu to include "Unix", "Windows"

(8 marks)

e) Explain the difference between **setMnemonic** and **setAccelerator**.

(5 marks)

[30 marks]

Question 3

- a) Write the **Java code** to create a **GUI code template** consisting of the following code segments:

Java task	Task Details
Import	packages
Define	class and method
Create	frame, container and panel
Set	title and size
Display	gui screen

(5 marks)

- b) Write the **Java code** to set up and link the following **objects** to the frame:

Component	Text	Features
Password field	"?" on keystroke	Maximum of 8 characters
Label	DVD Information	Icon "DVD.jpg"
Text field	DVD Name	
Text area	DVD Title	Add Scrollbars
Radio Button	Original	Allow select on one radio button only
Radio Button	Copy	Allow select on one radio button only
Button	Order	
Button	Print	

(15 marks)

- c) Write the **Java code** to include event listeners and event handling :

Button Selection	Action
Order button	Add and register an action listener.
Print button	Add and register an action listener. On click display a dialogue box indicating the print button was selected.

(10 marks)

[30 marks]

Question 4

- a) Write a **single** Java line of code to **create** and **populate** a **combo** box called **COMBO1** from a 1D **array** called **students**.
(5 marks)

- b) Write the Java **code** segment to **populate** a **combo** box called **COMBO1** from a 1D **array** called **courses** with twenty elements.
Use a **For** loop and transfer every second element.
(5 marks)

- c) Explain the **purpose** of using Design Patterns.
(5 marks)

- d) The architecture of the Model View Controller Design Pattern consists of three objects.

Explain the **purpose** of the following objects in the MVC:

Model object
View object
Controller object

(9 marks)

- e) Outline an **example** of an application of the Model View Controller, indicating the role of the three MVC components in this example.

(6 marks)

[30 marks]