**E.G.S PILLAY ENGINEERING COLLEGE, NAGAPATTINAM**

**DEPARTMENT OF COMPUTER APPLICATIONS**

**Weekly Test I – Answer Key**

**Subject Code/Name: MC9243/Visual Programming Marks: 100**

**Sem/Year: II/IV Time: 3 Hrs**

**Staff Name: Mr.** S.Selvaganapathy  **Date:**

 **PART-A 10\*2=20**

**Answer All the Questions**

1. What is Windows Programming?

Windows Programming uses GUI concept. It is an event-driven programming. An Application Window will respond to the events by generating a message by the Operating System. It uses graphics for organizing user workspace. Programs that run within Windows also user GUI. (e.g.): Word, Excel. These application programs use some built-in functions present in API.

1. Write the components of GUI.

Pointer, Pointing Device, icons, desktop, windows and Menus

1. What is an API?

API is acronym for Application Programming Interface. It is simply a set of functions that are part of windows OS. Calling the functions present in the API can create programs.

1. Define Handle.

A handle is simply a number (usually 32 bit size) that refers to an entity. The entity could be a window, an icon, a brush, a cursor, a file or any such entry.

1. What is Hungarian Notation?

It is a variable-naming convention so called in the honour of the legendary Microsoft programmer Charles Simonyi. According to this convention the variable name begins with a lower case letter that denotes the data type of the variable. E.g. sz of szCmdLine stands for string terminated by zero.

1. List out the steps required for creating a window.

(a) Registering a window class (b) Create a window using create function (c) Message Loop to process events (d) Window Procedure with specific tasks for messages.

1. Define Message loop.

A Program retrieves the messages from the message queue by executing a block of code known as the Message loop.

1. What are the methods for getting a device context handle?

Method 1: This method is used when WM\_Paint message is processed. Two functions are involved, BeginPaint and EndPaint.

Method 2: To get a handle to the device context of the client area of the window GetDC is called. ReleaseDC is used to release the DC handle.

1. What is GDI?

The Graphics Device Interface (GDI) provides functions and related structures that an application use to generate graphical output for displays, printers and other devices.

1. What is the use of Translate and Dispatch message functions?

A message loop include TranslateMessage, if the message loop receive character input from the keyboard, the system generates virtual key messages WM\_KEYDOWN and WM\_KEYUP to each key the user process.

 The Dispatch message functions sends a message to the window procedure associated with the window handle specified in the MSG structure.

 **PART-B 5\*16=80**

1. Describe in detail the Windows Programming Model and Windows Procedure.

Definition of the Windows Program (2 Marks)

Diagram of a simple windows programming model (4 Marks)

WinMain() Function Importance (3 Marks)

Window procedure Definition (2 Marks)

Role of Message Identifier (3 Marks)

Window handle definition and message handler usage(2 Marks)

OR

1. Discuss Windows Messages in detail.

Hungarian Notation of Prefixing variables and Messages.

Ex. WM\_KEYPRESS (3 Marks)

List of Common Window Messages and when it is sent (5 Marks)

Message Map explanation (5 Marks)

3 types of macros for Mapping messages (3 Marks)

1. What you mean by Event Driven Programming? Discuss its Basic model.

Event-driven Programming Definition (2 Marks)

Diagram of Basic event driven Programming (3 Marks)

3 Steps in creating event driven programs (6 Marks)

Advantages of event driven programming (5 Marks)

OR

1. Explain in detail GUI components and controls

GUI components and controls Definition (4 Marks)

Two Types of interfaces – GUI and CLI ( 2 Marks)

Characteristics of GUI (3 Marks)

Components of GUI ( 3 Marks)

List of GUI controls (2 Marks)

Two GUI Event Modes i. Message-loop Mode(default) ii OnEvent mode(2 Marks)

1. Discuss the steps in (a) Creation of Windows (b) Displaying of Windows

(a)

Initializing the window class members (2 Marks)

Registering the Window class (2 Marks)

CreateWindow() function Prototype (4 Marks)

(b)

ShowWindow() function Prototype ( 4 Marks)

Role of UpdateWindow() function (4 Marks)

OR

1. (a) Write a simple window program. (b) Briefly explain Registering window class.

 Header files definitions #include<Windows.h> (2 Marks)

 Function definition of int WINAPI WinMain() (4 Marks)

 Registering Window – RegisterClass(&wnd) (4 Marks)

 Creating window using CreateWindow() and specifying Window styles like

 WS\_OVERLAPPEDWINDOW (6 Marks)

1. Elaborate the Message loop functions.

Definition of Message loop function (2 Marks)

Get Message function syntax and usage (3 Marks)

Message Structure (3 Marks)

TranslateMessage function role and syntax (4 Marks)

DispatchMessage function role and syntax (4 Marks)

OR

1. Briefly explain (a) WM\_PAINT (b) WM\_DESTROY messages

(a)

 Usage of WM\_PAINT message (2 Marks)

 Syntax of BeginPaint and EndPaint() (4 Marks)

 PAINT message structure (2 Marks)

(b)

 Usage of WM\_DESTROY message (2 Marks)

 Syntax of PostQuitMessage() and its use (4 Marks)

 Role of wParam (2 Marks)

1. Discuss Windows Data types and Hungarian Notation.

Wider Characters (3 Marks)

Uppercase Identifiers (3 Marks)

New datatypes (4 Marks)

Hungarian Notation- Concept of Prefixing variables with examples (6 Marks)

 OR

1. Discuss briefly (i) Device context (ii) Text output

(i)

Device Context Definition (2 Marks)

6 Methods of getting Device context handle (6 Marks)

(ii)

Use of TextOutput function (2 Marks)

Syntax of TextOut() (3 Marks)

Example Code Snippet (3 Marks)