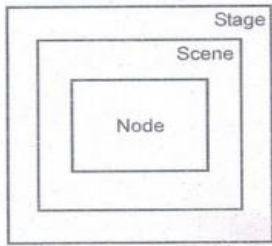
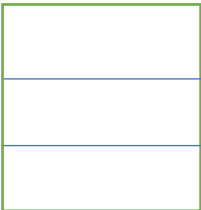
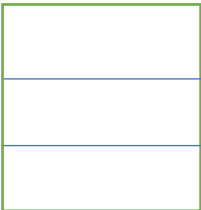
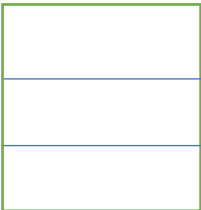


UNIT V JAVAFX EVENT HANDLING, CONTROLS AND COMPONENTS	
S.NO	PART A
1.	What is JavaFX? JavaFX is a set of graphics and media packages that enable developers to design, create, test, debug, and deploy desktop applications and Rich Internet Applications (RIA) that operate consistently across diverse platforms. The applications built in JavaFX can run on multiple platforms including Web, Mobile, and Desktops.
2.	What are the three major components in JavaFX application? A JavaFX application will have three major components namely 1. Stage 2. Scene and 3. Nodes  Fig. 5.1.1 Major Components of JavaFX Application
3.	What are the five different stages available in JavaFX application? 1. Decorated 2. Undecorated 3. Transparent 4. Unified 5. Utility
4.	What is lifecycle of a JavaFX application? 1. launch() - to launch JavaFX application. 2. init() – An empty method which can be overridden, but you cannot create a stage or scene in this method. 3. start() – The entry point method where the JavaFX graphics code is to be written. 4. stop() – An empty method which can be overridden, here we can write the logic to stop the application.
5.	What are the general rules for writing JavaFX Application? A JavaFX Application must extend javafx.application.Application. 1. The main() method should call Application.launch() 2. The start() method is the main entry point for all JavaFX applications Start() is called when a Stage is connected to the Operating System's window 3. The content of the scene is represented as a hierarchical scene graph of nodes: Stage is the top-level JavaFX Container Scene is the container for all content
6.	What is an event? An event is a notification about a change. It encapsulates the state changes in the event source. Registered event filters and event handlers within the application receive the event and provide a response.

7.	What is an Event Handling? Event handling is the mechanism that controls the event and decides what should happen, if an event occurs. It has the code which is known as Event Handler that is executed when an event occurs.
8.	Mention the properties of JFX. 1.Event source 2.Event target 3.Event type
9.	What are the Phases of Event Handling in JavaFX? 1. Target Selection – Depends on the particular event type. 2. Route Construction – Specified by the event target. 3. Event Capturing – Event travels from the stage to the event target. 4. Event Bubbling – Event travel back from the target to the stage.
10.	What are the methods In Event Handling? 1. Convenience Methods: a. setOnKeyPressed(eventHandler); b. setOnMouseClicked(eventHandler); 2. Event Handler/Filter Registration Methods: a. addEventHandler(eventType, eventHandler); b. addEventFilter(eventType, eventFilter); 3. Event Dispatcher Property (lambda expression).
11.	Define KeyEvent. It is an input event that indicates the key stroke occurred on a node. ✓ It is represented by the class named KeyEvent. ✓ This event includes actions like key pressed, key released and key typed.
12.	What are the Types of Key Event in Java? 1. KEY_PRESSED 2. KEY_RELEASED 3. KEY_TYPED
13.	What are the types of Mouse Events in JavaFX? 1. ANY 2. MOUSE_PRESSED 3. MOUSE_RELEASED 4. MOUSE_CLICKED 5. MOUSE_MOVED 6. MOUSE_ENTERED 7. MOUSE_EXITED 8. MOUSE_DRAGGED

14.	What are the three main aspects of User Interface? 1. UI elements – These are the core visual elements which the user eventually sees and interacts with. 2. Layouts – They define how UI elements should be organized on the screen. 3. Behavior – These are events which occur when the user interacts with UI elements.														
15.	Define Layout Pane. Layout panes are containers which are used for flexible and dynamic arrangements of UI controls within a scene graph of a JavaFX application.														
16.	What is Menu and MenuBar? Menu is a popup menu that contains several menu items that are displayed when the user clicks a menu. The user can select a menu item after which the menu goes into a hidden state. MenuBar is usually placed at the top of the screen which contains several menus. JavaFX MenuBar is typically an implementation of a menu bar.														
17.	Mention the built-in Layouts present in JavaFX. JavaFX provides various built-in Layouts that are: <table border="1"> <thead> <tr> <th>Layout Pane</th><th>Description</th></tr> </thead> <tbody> <tr> <td>HBox</td><td>This layout pane arranges all the nodes in a single horizontal row.</td></tr> <tr> <td>VBox</td><td>This layout pane arranges all the nodes in a single vertical column.</td></tr> <tr> <td>StackPane</td><td>In this layout pane, the nodes are placed on top of each other in the center of the pane.</td></tr> <tr> <td>GridPane</td><td>The nodes are placed in cell in two dimensional grid.</td></tr> <tr> <td>FlowPane</td><td>This is a layout pane, in which the nodes are placed row by row horizontally or column by column vertically.</td></tr> <tr> <td>BorderPane</td><td>The nodes can be placed at the top, bottom, left, right or at the center regions.</td></tr> </tbody> </table>	Layout Pane	Description	HBox	This layout pane arranges all the nodes in a single horizontal row.	VBox	This layout pane arranges all the nodes in a single vertical column.	StackPane	In this layout pane, the nodes are placed on top of each other in the center of the pane.	GridPane	The nodes are placed in cell in two dimensional grid.	FlowPane	This is a layout pane, in which the nodes are placed row by row horizontally or column by column vertically.	BorderPane	The nodes can be placed at the top, bottom, left, right or at the center regions.
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18	List any two forms of CheckBox Menu Item Constructors new CheckBox() new CheckBox(String s)														
19	What is the use of adapter class In JAVA, an adapter class allows the default implementation of listener interfaces. It is one of the many techniques used to handle events in Graphical User Interface (GUI) programming languages, such as JAVA.														
20	Differentiate HBox and VBox HBox and VBox containers are used to layout the containers nested within them either horizontally from left to right (HBox) or vertically from top to bottom (VBox). <table border="1"> <thead> <tr> <th>VBox</th><th>HBox</th></tr> </thead> <tbody> <tr> <td>Places the nodes in a single column</td><td>Places the nodes in a single row</td></tr> <tr> <td></td><td></td></tr> </tbody> </table>	VBox	HBox	Places the nodes in a single column	Places the nodes in a single row										
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21	Explain the terms – Stage, scene, Scene graph and node used in JavaFX application 1) Stage: Stage is like main frame of the program. It acts as a container for all the objects of JavaFX application. The most commonly used stage is a PrimaryStage. 2) Scene: The Javafx.scene.Scene class provides the methods to deal with the scene object. It contains the nodes or all the contents of Scene graph 3) The scene graph is a collection of various nodes. 4) The node is an element that can be visualized on the screen. The node can be button, textbox, radio button and so on										
22	What is property binding in JavaFX Property binding is a technique that enables target object to bind with the source object. Due to this mechanism, when the value in source object changes then the target property also changes automatically.										
23	What are various features of JavaFX ? <table border="1"> <thead> <tr> <th>Feature</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Java Library</td><td>It consists of many classes and interfaces that are written in Java</td></tr> <tr> <td>Built in UI controls</td><td>Built-in controls are not dependent on operating system. The UI controls are used to develop a full featured application</td></tr> </tbody> </table>	Feature	Description	Java Library	It consists of many classes and interfaces that are written in Java	Built in UI controls	Built-in controls are not dependent on operating system. The UI controls are used to develop a full featured application				
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24	What is Event and Event Source Object Event means any activity that interrupts the current ongoing activity. For example: When user clicks button then it generates an event. To respond to button click we need to write the code to process the button clicking action. The object that generates the event is called event source object. For example - If the event gets generated on clicking the button, then button is the event source object.										
25	Explain any two UI controls used in JavaFX application <table border="1"> <thead> <tr> <th>Control</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Label</td><td>Label is a control that displays simple text on the screen. It is generally used to describe the other user controls.</td></tr> <tr> <td>Button</td><td>Button component is used to control specific function of the application.</td></tr> <tr> <td>RadioButton</td><td>The radio button is used to provide the choices to the user. The radio button can be selected or deselected.</td></tr> <tr> <td>CheckBox</td><td>The checkbox is used to provide various choices to the user. The check box can be checked(True) or unchecked(False).</td></tr> </tbody> </table>	Control	Description	Label	Label is a control that displays simple text on the screen. It is generally used to describe the other user controls.	Button	Button component is used to control specific function of the application.	RadioButton	The radio button is used to provide the choices to the user. The radio button can be selected or deselected.	CheckBox	The checkbox is used to provide various choices to the user. The check box can be checked(True) or unchecked(False).
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