

**Unit 1: Multithreaded Programming****Que 1: Short Questions Answer.**

1. How Java can reduce inefficiency by preventing the waste of CPU cycles?
2. In which state, thread halts its execution immediately?
3. Define context switch.
4. In which class isAlive() method is available?
5. Garbage collector thread belongs to which priority?
6. List all constructors of Thread class.
7. Which are the methods available in a Runnable interface?
8. Write signature of isAlive() and sleep().
9. Which mechanism defined by Java for the resources to be used by only one thread at a time?
10. Which is the default thread at the time of starting program execution?
11. Which priority thread can prompt the lower priority thread?
12. At a time, how many threads can access a monitor?
13. Which method waits for the thread to die?
14. How thread can communicate with each other?

**Que 2: Brief Questions Answer.**

1. In what manner single threaded system works?
2. Exactly how multi-threaded system works?
3. List out all the states of Threads.
4. What is the usage of thread priority?
5. Describe the thread-based multitasking with proper example.
6. Describe the process-based multitasking with proper example.
7. Which are the two ways to create Thread?
8. What is the procedure to own the monitor by many threads?
9. What is the default values for the Max Priority, min-priority, normal-priority?
10. List all states associated with thread.
11. What is mean by daemon thread? In Java runtime, what is its role?
12. What is the use of wait()?
13. Differentiate notify() and notifyAll()?
14. What will be the output of the program?

```
class MyThread extends Thread
{
    public static void main(String [] args)
    {
        MyThread t = new
        MyThread(); t.start();
        System.out.println("one. ");
        t.start();
        System.out.println("Two. ");
    }
    public void run()
    {
        System.out.println("Thread ");
    }
}
```

**Que 3: Long Questions Answer.**

1. Describe synchronization with respect to multithreading.
2. Explain the different way to create a thread in Java with proper example.
3. Differentiate Thread.start() and Thread.run() method with an example.
4. Why do we need run() and start() method? Can we achieve with it only run() method? Justify.
5. What is the reason to throw InvalidMonitorStateException?
6. What is the difference between sleep(),suspend() and wait()?
7. What happens when you make static method as synchronized?
8. Can a thread call non-synchronized instance method of an object when a synchronized method is being executed?How?
9. Can two threads call two different synchronized instance methods of an object?How?
10. Explain deadlock with an example.
11. What is thread pool? Why should we use thread pools?
12. Can we synchronize the run method? If yes then what will be behavior?
13. Can we synchronize the constructor of a Java class?Justify.
14. Explain different ways of creating a thread with suitable example. Which one would you prefer and why?
15. Explain high level state of Threads.
16. Differentiate yield() and sleep(), and sleep() and wait().
17. Explain thread priority with an example.

**Que 4: Multiple Choices QuestionAnswer.**

1. What is the name of the method used to start a thread execution?
  - A. init()
  - B. start()
  - C. run()
  - D. resume()
2. Which two are valid constructors for threads?
  - A. Thread(Runnable r, String name);
  - B. Thread();
  - C. Thread(int Priority);
  - D. Thread(Runnable r,ThreadGroup g);
  - E. Thread(Runnable r,int Priority);
3. Which are the three methods of the object class?
  1. notify();
  2. notifyAll();
  3. isInturrupted();
  4. synchronized();
  5. interrupt();
  6. wait(long millisecond);
  7. sleep(long milisecond);
  8. yield();
  - A. 1,2,3
  - B. 2,4,5
  - C. 1,2,6
  - D. 2,3,4
4. class x implements Runnable{

```
public static void main(String args[]){
    /*missing code*/
}
```

```
public void run() {}
}
```

Which of the following line code is suitable to start a thread?

- A. Thread t = new Thread(x);
  - B. Thread t = new Thread(x).start();
  - C. X run= new x();Thread t= new Thread(run); t.strat();
  - D. Thread t= new Thread(); t.run();
5. Which cannot directly cause a thread to stop executing?
- A. Calling the setPriority() method on a thread object.
  - B. Calling wait() method on an object.
  - C. Calling notify() method on an object
  - D. Calling read() method on an InputStream object.
6. Which two of the following methods are defined in class thread? start();  
wait();  
notify();  
run();  
terminate();
- A. 1 and 4
  - B. 2 and 3
  - C. 3 and 4
  - D. 2 and 4
7. Which of the following will directly stop execution of tread?
- A. wait()
  - B. notify()
  - C. notifyAll()
  - D. exit synchronized code
8. Which method must be defined by a class implementing the Java.lang.Runnable?
- A. void run()
  - B. public void run()
  - C. public void start()
  - D. void run(int priority)
9. Which will contain the body of the thread?
- A. run();
  - B. start();
  - C. stop();
  - D. main();
10. Which method registers a thread in a thread scheduler?
- A. run();
  - B. construct();
  - C. start();
  - D. register();
11. Which class or interface defines the wait(), notify(), and notifyAll() methods?
- A. Object

- B. Thread
- C. Runnable
- D. class

**Que 5: Fill in the blank.**

1. To enable the entire environment to be asynchronous, Java used \_\_\_\_\_.
2. Java priorities are in the range between \_\_\_\_\_ and \_\_\_\_\_.
3. By default every thread is given priority \_\_\_\_\_.
4. Thread can create by implementing \_\_\_\_\_.
5. To create thread class we need to implement \_\_\_\_\_ method.
6. \_\_\_\_\_ method will make your thread in running state.
7. Thread priorities are \_\_\_\_\_ that specifies the relative priority of one thread to another.
8. Threads of equal priority are \_\_\_\_\_ in round robin fashion.
9. A thread can be preempted by a \_\_\_\_\_.
10. Java's multi-threading system is built upon the \_\_\_\_\_ class.
11. Thread begins running immediately by \_\_\_\_\_ of your program.
12. \_\_\_\_\_ method determine if thread is still running or not.
13. \_\_\_\_\_ method suspend a thread for a period of time.
14. \_\_\_\_\_ wait for a thread to terminate.
15. Sleep method may throw an \_\_\_\_\_ exception.
16. After the new thread is created, it will not start running until you call its \_\_\_\_\_ method.
17. The extending class must override the \_\_\_\_\_ method.
18. The \_\_\_\_\_ method returns true if the thread upon which it is called is still running.
19. \_\_\_\_\_ Method waits until the thread on which it is called terminates.

**Que 6: True or false.**

1. A terminated thread cannot be resumed.
2. A thread can be preempted by a higher-priority thread.
3. A thread can voluntarily relinquish control.
4. Multithreading introduces an asynchronous behavior to your programs.
5. The suspend() method is used to terminate a thread.
6. The run() method should necessary exists in classes created as subclass of thread.
7. When two threads are waiting on each other and can't proceed the program is said to be in a deadlock.
8. The word synchronized can be used with only a method.
9. The suspend() method is used to terminate a thread.
10. The run() method should necessary exists in classes created as subclass of thread.
11. When two threads are waiting on each other and can't proceed the program is said to be in a deadlock?
12. Garbage collector belongs to high priority.
13. sleep() method waits for the thread to die.
14. *main* is the default thread at a time of starting the program.
15. Threads of equal priority are time-sliced automatically in round robin fashion.
16. A thread cannot be preempted by a higher priority thread.
17. When Java program starts up, one thread begins running immediately. This is usually run() method of your program.
18. Java's multithreading system is built upon the Runnable interface.

19. To create or implement threading concept in your Java program you need to either implement runnable interface or extend Thread class.
20. To override run method in program is optional while extending Thread class to create thread.
21. The isAlive() method returns false if the thread upon which it's called is still running.
22. More than one thread can own a monitor at a given time.
23. Deadlock situation occurs when only thread in a right way.

### Unit 2: Network Programming

#### Que 1: Short Questions Answer.

1. What is the endpoint of the network?
2. For low-level routing protocol, what is used?
3. What is the higher-level protocol?
4. Define user datagram protocol.
5. Who supports point to point datagram-oriented model?
6. What is the use of factory method of InetAddress class?
7. IPv6 uses how many bit value to represent address.
8. Under which package of Java InetAddress located.
9. Define use of InetAddress.
10. Which package must include to access the Cookie class and interface?
11. What is datagrams?
12. Which method is use to retrieve a data from the datagram after it is received?
13. Which information is needed to create a TCP socket?
14. Full form of TCP.
15. Define TCP.
16. What is protocol?

#### Que 2: Brief Questions Answer.

1. List any two important TCP Socket classes.
2. List two important TCP Socket classes.
3. Write a scenario when *MalformedURLException* and *UnknownException* throws.
4. Write port number for FTP, Telnet, and HTTP.
5. Define Link, Network, and Socket.
6. What is the use of server?
7. What is the difference between the file and RandomAccessFile classes?
8. What are the two important TCP Socket classes?
9. What is the return type of getContentLenght()? If length is unavailable then what is it returns?
10. List out the steps to send message using UDP.
11. List out the constructor of Socket class.
12. Briefly explain the method of ServerSocket class.

#### Que 3: Long Questions Answer.

1. How can we create an instance of the *InetAddress* class? Explain all the factory methods with example.
2. Write a program to display InetAddress and name of local machine.

3. Explain IP, TCP and UDP in detail.
4. Differentiate Factory method and Instance method of *InetAddress* class.
5. Write a program to create a URL(<http://www.srimca.edu.in>) and display all its properties.
6. What is the difference between URL instance and *URLConnection* instance?
7. What is the use of Uniform Resource Locator? Explain all the constructors of that class with example.
8. How can we access the attribute of remote resource? Explain all the methods of *URLConnection* class with example.
9. What is the subclass of the *URLConnection* class? Explain all the methods of that class with example.
10. Write a program using URL and *URLConnection* to establish connection to any site and get the information of the same site.
11. What is *Datagram*? Explain *Datagram* with an appropriate example.
12. Write a program using *Datagram* classes to send a message to the client by the server.
13. Write a program to write an information from the client side and display that information on server.
14. Explain *DatagramSocket* in detail with its constructor and methods.
15. Explain *DatagramPacket*. Define its different constructors.
16. State all differences between *URLConnection* and *HttpURLConnection*?

**Que 4: Multiple Choices Question Answer.**

1. Which one is the higher-level protocol?
  - A. TCP
  - B. UDP
  - C. FTP
  - D. HTTP
2. From the following which one is not an instance method of *InetAddress* class?
  - A. `getLocalHost()`
  - B. `getByName()`
  - C. `getAllByName()`
  - D. `toString()`
3. The *InetAddress* class is used to encapsulate
  - A. IP Address
  - B. Domain Name
  - C. Internet Address
  - D. A and B
4. *InetAddress* can handle which addresses?
  - A. IPv4
  - B. IPv6
  - C. Both A and B
  - D. None
5. What is the port no of HTTP?

- A. 21  
B. 23  
C. 119  
D. 80
6. What is protocol in given URL <http://www.vts24.com>
- A. HTTP  
B. WWW  
C. .Com  
D. vts24
7. URL's methodOpenConnection() throws which Exception?
- A. MalformedURLException  
B. InterruptedException  
C. NullPointerException  
D. IOException
8. Which of the following services use TCP?
- 1.) DHCP 2.)SMTP 3.)HTTP 4.)TFTP 5.)FTP
- A. 1 and 2  
B. 2,3 and 5  
C. 1,2 and 4  
D. 1,3 and 4
9. Which of the following is a protocol for breaking and sending packets to an address across a network?
- A. TCIP/IP  
B. DNS  
C. Socket  
D. Proxy Server
10. What is the output of the following code?
- ```
import Java.net.*;
class networking{
    public static void main(String[]args)throws UnknownHostException{
        InetAddress obj1 =InetAddress.getByName("sanfoundary.com");
        boolean x = obj1.equals(obj2);
        System.out.print(x);
    }
}
```
- A. 0  
B. 1  
C. true  
D. false
11. What is the output of the following code?
- ```
importJava.net.*;
class networking {
```

```

public static void main(String[] args) throws UnknownHostException {
    InetAddress obj1 = InetAddress.getByName("cisco.com");
    System.out.print(obj1.getHostName());
}
}

```

- A. cisco
  - B. cisco.com
  - C. www.cisco.com
  - D. None of the mentioned
12. How long is an IPv6 address?
- A. 8 bits
  - B. 64 bits
  - C. 128 bits
  - D. None of the above
13. UDP stands for,
- A. User Datagram Protocol
  - B. User Direct Protocol
  - C. User Datasocket Protocol
  - D. User Default Protocol

**Que 5: Fill in the blank.**

1. The *InetAddress* class is used to encapsulate \_\_\_\_\_ and \_\_\_\_\_.
2. The TCP and UDP protocols use \_\_\_\_\_ to map incoming data to a particular process running on a computer.
3. \_\_\_\_\_ is a connection-oriented and reliable protocol, \_\_\_\_\_ is a less reliable protocol.
4. \_\_\_\_\_ method is return an array of *InetAddress* class.
5. Java uses \_\_\_\_\_ class representing a server and \_\_\_\_\_ class representing the client that uses TCP protocol.
6. *getLocalPort()* return \_\_\_\_\_ if the socket is not bound.
7. An \_\_\_\_\_ exception is thrown if the connection fails.
8. \_\_\_\_\_ is used to obtain the content of the resource.
9. class \_\_\_\_\_ is used to create a packet of data for UDP protocol.
10. If something goes wrong related to the network, \_\_\_\_\_ will be thrown when dealing with TCP/UDP programming in Java.
11. The most part, you can simply use \_\_\_\_\_ when working with IP address.
12. \_\_\_\_\_ method is used to instantiate a *URLConnection* instance.
13. *Http* is on \_\_\_\_\_ port.
14. *URLConnection* object associated with the invoking \_\_\_\_\_ object.
15. \_\_\_\_\_ method is use to send a packat to the specified port.

**Que 6: True or false.**

1. TCP/IP reserved the higher 1024 ports for specific protocol.
2. The TCP and UDP protocols use domains to map incoming data to a particular process running on a computer.



3. The `getLocalHost()` will return the `InetAddress` object that represent remote host.
4. Datagram communication through the following classes `DatagramPacket` and `DatagramSocket`.
5. `isConnect()` will return false if the socket is not connected.
6. Port for HTTP is 90.
7. `OpenConnection()` method is from URL class.
8. UDP is more reliable than TCP protocol.
9. `getDate()` will return the date and time in millisecond.
10. The same port number can be reused many times when binding with sockets simultaneously.
11. When you create a `ServerSocket` It will register itself with a system having interested in client connection.
12. Port is represented by a positive (16-bit) integer value.
13. A socket is an endpoint of a three-way communication link between three programs running on the network.
14. A server program creates a specific type of socket that is used to listen for client requests.

### Unit 3: Event Handling and AWT

#### Que 1: Short Questions Answer.

1. What is source and listener?
2. Explain the purpose of Event object.
3. Describe the event adapter class. When should we use an event adapter class?
4. Define the signature of Event Source registration method.
5. Describe the unicasting the event.
6. Describe the multicasting the event.
7. Which exception is thrown by unicasting event?
8. Define the signature of Event source unregister method.
9. State the relationship between an event-listener interface and an event-adapter class?
10. What is the difference between a Scrollbar and a ScrollPane?
11. State the 2 method of MouseAdapter class
12. What class is the top of the AWT event hierarchy?
13. Describe the relationship between an event-listener interface and an event-adapter class?
14. What interface is extended by AWT event listeners?
15. Which method is used to identify the available font family name?
16. State two different constructor to create Frame in awt.
17. List the two different methods to set the window size in awt?
18. Define low level event classes.
19. State the purpose of `repaint()`.
20. What is use of `update()`?
21. State the use of `init()`?
22. List any 10 different methods of Graphics class.

**Que 2: Long Questions Answer.**

1. Explain delegation event model with proper example.
2. Explain in brief the event handling mechanism in Java with an proper example.
3. Describe the step to use the delegation event model with example.
4. What is adapter class?
5. List any four method of MouseListener interface with example.
6. Describe the layout manager with example.
7. Explain MouseListener
8. List the different event listener interfaces with methods.
9. Write a program that will cover all methods from MouseListener and MouseMotionListener.
10. Draw window fundamentals figure. And explain each class.
11. How can we create new frame window? How can we set the dimension of the frame window as well as how can we hide and show frame window and set window title.
12. Explain five component of AWT.
13. Write a code to set the grid layout of a container having 3 rows and 2 columns.
14. Write a program to create an applet which contain a list of all country. Display a selected country in the text box.
15. Explain color class with its constructor and methods and also with example that draw 2 different shapes on applet with 2 different color.
16. Explain use of Font class and explain each method of Font class with brief description.
17. Draw the diagram for Java event. And explain Semantic events and low level events.

**Que 3: Multiple Choices Question Answer.**

1. Name the method defined in EventObject class that returns the Object generated from the event. Select the one correct answer.
  - A. getEvent()
  - B. getObject()
  - C. getID()
  - D. getSource()
2. What is the return type of the method getID() defined in AWTEvent class. Select the one correct answer.
  - A. int
  - B. long
  - C. Object
  - D. Component
3. Name the event that gets generated when a button is clicked. Select the one correct answer.
  - A. KeyEvent
  - B. MouseEvent
  - C. ItemEvent
  - D. ActionEvent
4. Which event is generated when the position of a scrollbar is changed. Select the one correct answer.
  - A. KeyEvent
  - B. MouseEvent

- C. ItemEvent
  - D. AdjustmentEvent
5. Which of the following Objects can generate ActionEvent. Select the one correct answer.
- A. List
  - B. TextArea
  - C. CheckboxMenuItem
  - D. Choice
6. Which method identifies the type of an event generated. Select the one correct answer.
- A. getSource()
  - B. getType()
  - C. getEventType()
  - D. getID()
7. Which of the following are legal adapter classes in Java. Select the two correct answers.
- A. ActionAdapter
  - B. ItemAdapter
  - C. TextAdapter
  - D. MouseAdapter
  - E. MouseMotionAdapter
8. Which of these listener classes have corresponding adapter classes. Select the two correct answers.
- A. ContainerListener
  - B. TextListener
  - C. ItemListener
  - D. MouseMotionListener
9. Which of these are valid adapter classes. Select the one correct answer.
- A. ActionAdapter
  - B. AdjustmentAdapter
  - C. KeyAdapter
  - D. TextAdapter
10. Which of these methods are defined in MouseMotionListenerinterface. Select the two correct answers.
- A. mouseClicked()
  - B. mousePressed()
  - C. mouseEntered()
  - D. mouseDragged()
  - E. mouseMoved()
11. What is the return type of the method getSource() defined in EventObject class. Select the one correct answer.
- A. int
  - B. long
  - C. Object
  - D. Component
12. Which event object is generated when a text field is modified?
- A. Text Event
  - B. Low level Events
  - C. Focus Event

## D. Key Event

13. Which event objects is generated when any components are added or removed from container?

- A. Container Event
- B. Component Event
- C. Focus Event
- D. Text Event

14. Which method of window listener is used to close frame window?

- A. WindowClosed()
- B. WindowClosing()
- C. WindowClose()
- D. Close()

15. Which method is used to set title of frame window?

- A. setTitle(String Title);
- B. setTitle();
- C. Title(String Title);
- D. setWindowTitle(String title);

16. Using which class we can create frame window?

- A. Window
- B. Frame
- C. Container
- D. Component

17. Which method is used to set visibility of frame window?

- A. setVisibility();
- B. setVisible(Boolean setFlag);
- C. setVisible(String setFlag);
- D. setVisible();

18. Listener can be register with which method?

- A. AddTypeListener();
- B. RegisterTypeListener();
- C. AddListener();
- D. AddTypeListenerInterface();

19. Which method is used to remove listener?

- A. RemoveTypeListener();
- B. UnregisterTypeListener();
- C. UnregisterListener();
- D. RemoveListener();

**Que 4: Fill in the blank.**

1. The package \_\_\_\_\_ defines many types of events that are generated by various user interface elements.

2. \_\_\_\_\_ method is used to centering the text.
3. To handle mouse click event \_\_\_\_\_ interface we need to implement in our class.
4. *FocusEvent* is a subclass of \_\_\_\_\_ class.
5. \_\_\_\_\_ method is use to restore the window.
6. \_\_\_\_\_ and \_\_\_\_\_ are methods of *MouseEvent* interface.
7. \_\_\_\_\_ method is part of *ActionListener* interface.
8. \_\_\_\_\_ class is used to create color for different object.
9. A graphics context is encapsulated by the \_\_\_\_\_ class.
10. \_\_\_\_\_ font is default if you don't explicitly set a font.
11. To use the concept of *awtEvent* \_\_\_\_\_ package we need to import.
12. A \_\_\_\_\_ event is generated when the size, position, or visibility of a component is changed.
13. If no valid character is available, then *getKeyChar()* returns \_\_\_\_\_ .
14. To handle key event \_\_\_\_\_ interface is used.
15. To create Applet we need to extends \_\_\_\_\_ class.

**Que 5: True or false.**

1. A component subclass that has executed *enableEvents()* to enable processing of a certain kind of event cannot also use an adapter as a listener for the same kind of event.
2. All Applet must import *Java.event* and *Java.awt*.
3. *Applet* keyword is used to run applet program from cmd.
4. *Init()*, *start()*, *paint()*, *stop()* and *destroy()* are the method of applet life cycle.
5. A listener is an object that is notified when an error occur.
6. The event delegation model, introduced in release 1.1 of the JDK, is fully compatible with the event model.
7. *EventObject* contains two method: *getSource()* and *toString()*.
8. *drawstring()* method is used to draw string on applet.
9. *Graphic* is class that is used to deal with graphics for applet.
10. Every color is created from an RGB value.
11. The 1<sup>st</sup> argument of the *MouseEvent* is *src* of *Component* type.
12. A panel is a window that does not contain a title bar, menu bar, or border.
13. *setEditable()* method is used to set a text component to read only state.
14. *ComponentEvent* object is generated when component receives focus for input.
15. If a frame uses its default layout manager and does not contain any panels, then all the components within the frame are the same height and width.
16. *New TextArea(10,20)* constructor creates a *TextArea* with 10 rows and 20 columns.
17. *Panel* is a subclass of *Applet*.
18. The *getSize()* is use to get the current dimension of the screen.

**Unit 4: Controls, Layout Managers and Menus****Que 1: Short Questions Answer.**

1. How to change a button from enable to disable after click ?

2. Explain the term controls. What are different types of controls in AWT?
3. State the difference between choice and list?
4. What is a layout manager? What are different types of layout managers available in Java AWT?
5. Which containers use a Border layout as their default layout?
6. State the difference between scrollbar and scroll pane?
7. Which containers use a Flow layout as their default layout?
8. You want to construct a text area that is 80 character-widths wide and 10 character-heights tall. What code do you use?
9. What are the SubClass of *Textcomponent* Class?
10. Which TextComponent method is used to set a TextComponent to the read-only state?
11. How can the Checkbox class be used to create a radio button?
12. What Checkbox method allows you to tell if a Checkbox is checked?
13. What methods are used to get and set the text label displayed by a Button object?
14. State the difference between a Choice and a List?
15. What are the subclasses of the Container class?
16. List components are used to get text input from the user.
17. Which containers use a BorderLayout as their default layout?
18. What is the default layout for an applet and frame?
19. State five different constructor of TextArea class with proper signature.
20. What is difference between Modal dialog and Modeless dialog?
21. Which method is used to obtain the number of items in the list? Write with proper signature.
22. State 3 different constructor of Menu class with proper signature.

**Que 2: Long Questions Answer.**

1. How are the elements of different layouts organized?
2. List the types of Checkboxes and what is the difference between them?
3. Describe the use of flowlayout? Which class is used to create flowlayout? List different constant used to set the flowlayout. Explain it with example in which you have to add 6 different components in a window with use of Flowlayout.
4. Write a program to create a three labels and adds them to an applet window.on clicking on any button display an appropriate message.
5. State the difference between a MenuItem and a CheckboxMenuItem?
6. State the difference between MenuBar, Menu and MenuItem.
7. Describe the use of layout manager. Which method is used to set the layout of window in awt? Which different layouts are supported in awt? Explain any one of them in detail with example.
8. How one can create checkable menu item? Which class is used to create checkable menu item? Explain with example.
9. What is use of gridbag layout? List any 6 methods of the same class with proper signature and with brief description. Explain with example which includes 6 methods

you have described above.

10. What is use of dialog box? Which are the two different types of dialog are there and give difference between them? Explain it with proper example.
11. Write a program that will demonstrate all the method of the checkbox and checkbox group class.
12. Write a program that demonstrates Border Layout.
13. Describe the use of menu item. How one can add menu items in menu? Explain it with proper example.
14. Explain the File Dialog box. Also explain all its constructor and method with proper example.
15. What is use of card layout? Which class is used to create card layout? List different constructors and methods with proper signature of the same. Explain it with example which creates a two-level card deck that allows the user to select an operating system. Window based operating systems are displayed in one card. Other os will be in the other card.

**Que 3: Multiple Choices Question Answer.**

1. Which of the following Objects can generate ItemEvent?
  - A. CheckBox
  - B. Button
  - C. List
  - D. MenuItem
2. Which Component method is used to access a component's immediate Container?
  - A. setVisible()
  - B. getImmediate()
  - C. getParent()
  - D. getContainer()
3. Which of the following are direct or indirect subclasses of Component?
  - A. Button
  - B. Label
  - C. Checkbox
  - D. MenuItemToolbar
4. Which of the following are direct or indirect subclasses of Container?
  - A. Frame
  - B. TextArea
  - C. MenuBar
  - D. FileDialog
5. Which method is used to set the text of a Label object?
  - A. setText( )
  - B. setLabel( )
  - C. setTextLabel( )
  - D. setLabelText( )
6. Which of the following creates a List with 5 visible items and multiple selection enabled?
  - A. new List(5, true)
  - B. new List(true, 5)
  - C. new List(5, false)

- D. `new List(false,5)`
7. Which constructor creates a `TextArea` with 10 rows and 20 columns?
- A. `new TextArea(10, 20)`
  - B. `new TextArea(20, 10)`
  - C. `new TextArea(new Rows(10), new columns(20))`
  - D. `new TextArea(200)`
8. Which method will cause a `Frame` to be displayed?
- A. `show( )`
  - B. `setVisible( )`
  - C. `display( )`
  - D. `displayFrame( )`
9. Which of the following components allow multiple selections?
- A. Non-exclusive Checkboxes.
  - B. Radio buttons.
  - C. Choice.
  - D. List.
10. Which method is method to set the layout of a container?
- A. `startLayout( )`
  - B. `initLayout( )`
  - C. `layoutContainer( )`
  - D. `setLayout( )`
11. Which layout should you use to organize the components of a container in a tabular form?
- A. `CardLayout`
  - B. `BorderedLayout`
  - C. `FlowLayout`
  - D. `GridLayout`
12. An Applet has its Layout Manager set to the default of `FlowLayout`. What code would be the correct to change to another Layout Manager?
- A. `setLayoutManager(new GridLayout());`
  - B. `setLayout(new GridLayout(2,2));`
  - C. `setGridLayout(2,2,);`
  - D. `setBorderLayout();`
13. The most commonly used layout managers are
- A. `FlowLayout`
  - B. `BorderLayout`
  - C. `GridLayout`
  - D. `CardLayout`
  - E. All of these
14. The AWT container is an instance of the \_\_\_\_\_ class which holds various components and other containers
- A. `Graphics`
  - B. `Container`
  - C. `Eventobj`



- D. None of these
15. \_\_\_\_\_ creates a dropdown list of textual entries
- A. Choice
  - B. Checkbox
  - C. Textbox
  - D. TextComponent
16. A menu bar represents
- A. A list of menus which can be added to the top of a top-level window
  - B. A list of menus which can be deleted to the top of a top-level window
  - C. A list of menus which can be added to the bottom of a bottom-level window
  - D. None of these
17. The two types of menu which are given as follows
- A. Pop-up menu
  - B. Regular menu
  - C. Both a & b
  - D. Both a & b

**Que 4: Fill in the blank.**

1. The CheckboxGroup class is a subclass of the \_\_\_\_\_ class.
2. All the component classes and container classes are derived from \_\_\_\_\_ class.
3. To remove all components from the container \_\_\_\_\_ method is used.
4. \_\_\_\_\_ Method is used to returns the preferred size of a component.
5. If no item is selected in the List the \_\_\_\_\_ is return.
6. \_\_\_\_\_ is used to set text field as editable.
7. You can specify \_\_\_\_\_ to add the item to the end of the list.
8. \_\_\_\_\_ method is used to get the item from list or choice control.
9. If more than one item is selected in the List the \_\_\_\_\_ is return.
10. \_\_\_\_\_ used to organize the components of a container in a tabular form.
11. To obtain the string currently contained in the text fields \_\_\_\_\_ method is used.
12. You can retrieve the echo character by calling the \_\_\_\_\_ method.
13. \_\_\_\_\_ are passive control that does not support any user interaction.
14. The replaceRange() is replace the characters from \_\_\_\_\_ to \_\_\_\_\_ .
15. \_\_\_\_\_ method is used to set the alignment of text on label.
16. \_\_\_\_\_ will return the name of respective component.

**Que 5: True or false.**

1. setLayout() method is used to set the layout of a container.
2. getPreferredSize() method is used to returns the preferred size of a component.
3. The *getComponent( )* method is used to access a Component that is contained in a Container.
4. ItemListener interface need to be implemented by choice and list control.
5. Click event will get generate when button is clicked by user.
6. Void setAlignment(String alignment) method is used to set the alignment of text on label.

7. The `getBorder()` method returns information about a Container's insets.
8. The List component does not generate any events.
9. When using the `GridBagLayout` manager, each new component requires a new instance of the `GridBagConstraints` class.
10. `setEchoChar(char ch)` is used to set text as password.
11. `setEditable(Boolean edit)` is used to set textfield as editable.
12. `getFile()` allow you to determine the name of the file.
13. If the 3<sup>rd</sup> parameter of the `FileDialog` constructor is set to `FileDialog.SAVE` then the box is select a file for reading.
14. To remove all components from the container `remove(component obj)` method is used.
15. Labels are passive control that does not support any user interaction.

### Unit 5: Java Bean and Swing

#### Que 1: Short Questions Answer.

1. What is Java bean?
2. Write all advantages of Java Bean.
3. Define term Introspection.
4. Design pattern for simple property.
5. Define bound property.
6. When swing comes in to the picture?
7. State key features of swing.
8. Define terms of MVC architecture.
9. Swing class is derived from which class?
10. List five different component of swing.
11. State different top level containers.
12. Swing components are derived from which package?
13. To close `JFrame` in swing which function is used?
14. To implement the event handling mechanism which packets we need to import?
15. Define constraint property.
16. Define persistence.
17. Which class is used to create label with icon?
18. Define use of toggle button?
19. Design pattern for indexed property.
20. Define use of `Beaninfo` interface.

#### Que 2: Long Questions Answer.

1. What is Java Bean? Discuss advantages of Java Bean.
2. What is introspection in Java bean? Explain design patterns for simple properties as well as indexed properties.
3. What is bound and constraint property in Java bean? Also explain how we can achieve persistence in Java bean?
4. What is use of `Beaninfo` interface? Explain it with proper example In which we can retrieve all events an properties of already created Java bean.
5. What is introspection? Explain it with proper example.
6. When Swing comes into the picture? How swing is more powerful than applet?

7. State drawback of AWT over swing. State features of swing.
8. Explain MVC architecture? Explain it with practical example.
9. What is difference between components and container? How we can achieve concept of container and component in swing? Which classes are used for the same?
10. How we can create swing application? Explain one program using one of these methods.
11. Explain event handling in swing with appropriate example.
12. How one can create swing applet? Explain with example.
13. Explain JLabel component in swing using ImageIcon. Explain all methods of JLabel and ImageIcon with brief description and with proper signature.
14. Develop one program that will cover all the methods of JLabel and ImageIcon control.
15. Explain JTextField component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods and constructors of JTextField class.
16. Explain JButton component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, constructors and event handling of JButton class.
17. Explain JToggleButton component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, constructors and event handling of JToggleButton class.
18. Explain JCheckBox component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, constructors and event handling of JCheckBox class.
19. Explain JRadioButton component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, constructors and event handling of JRadioButton class.
20. Explain JTabbedPane component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods and constructors of JTabbedPane class.
21. Explain JScrollPane component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods and constructors of JScrollPane class.
22. Explain JList component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, event handling and constructors of JList class.
23. Explain JComboBox component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, event handling and constructors of JComboBox class.
24. Explain Tree component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods, event handling and constructors of Tree class.
25. Explain JTable component in swing with brief description of all methods of the same class. Also develop one program that will cover all methods and constructors of JTable class.

**Que 3: Multiple Choices Question Answer.**

1. Process of analyzing a Bean to determine its capabilities is called
  - A. Introspection
  - B. Introspect

- C. Persistence
  - D. Bean Info
2. How many types of properties are there in Java Bean?
    - A. 2
    - B. 3
    - C. 4
    - D. None of these
  3. A \_\_\_\_\_ property has a single value.
    - A. Simple Property
    - B. Indexed Property
    - C. Constrained Property
    - D. None of these
  4. \_\_\_\_\_ is the ability to save the current state of a Bean, including the values of a Bean's properties and instance variables, to nonvolatile storage.
    - A. Persistence
    - B. Serialization
    - C. Transient
    - D. None of these
  5. You can selectively prevent a field from being saved through the use of the \_\_\_\_\_ keyword.
    - A. Transient
    - B. Serializable
    - C. Externalizable
    - D. None of these
  6. Which of the following is not a part of Java.beans package?
    - A. BeanInfo
    - B. DesignMode
    - C. Beans
    - D. PropertyManager
  7. Which of the following method is part of introspector class?
    - A. getBeanInfo()
    - B. isBound()
    - C. isConstrained()
    - D. getName()
  8. A Bean that has a \_\_\_\_\_ property generates an event when the property is changed.
    - A. Bound
    - B. Constrained
    - C. Indexed
    - D. None of these
  9. A Bean that has a \_\_\_\_\_ property generates an event when an attempt is made to change its value.
    - A. Constrained
    - B. Bound
    - C. Simple
    - D. None of these
  10. Which exception is thrown by Constrained Property?
    - A. PropertyChangeException
    - B. PropertyValueChangeException

- C. PropertyVetoException
  - D. None of these
11. Swing introduced in \_\_\_\_\_
- A. 1997
  - B. 1996
  - C. 1995
  - D. 1994
12. Swing components are derived from the
- A. JComponent
  - B. Component
  - C. Container
  - D. None of these
13. Following are the Top Level containers
- A. JApplet
  - B. JFrame
  - C. JDialog
  - D. JWindow
14. To set close operation on Frame which function is used
- A. setDefaultCloseOperation()
  - B. setDefaultCloseOperation()
  - C. setFrameCloseOperation()
  - D. none of these
15. To create swing applet we need to extend which class?
- A. JApplet
  - B. Applet
  - C. SwingApplet
  - D. None of these
16. How many constructors are there in JLabel class?
- A. 1
  - B. 2
  - C. 3
  - D. 4
17. Which class is used to create icon in Label?
- A. Icon
  - B. ImageIcon
  - C. Image
  - D. None of these
18. How many constructors are there in JTextField class?
- A. 1
  - B. 2
  - C. 3
  - D. 4
19. Set command for particular button which function is used?
- A. ActionCommand(String command)
  - B. getActionCommand()
  - C. setActionCommand(String str)
  - D. none of these

**Que4: Fill in the blank.**

1. MVC stands for \_\_\_\_\_.
2. To set the current action command when particular button is pressed \_\_\_\_\_ method is used.
3. \_\_\_\_\_ class is used to create icon for Label.
4. \_\_\_\_\_ component has a 2 different states: push and release.
5. Immediate super class for JCheckBox class is \_\_\_\_\_.
6. \_\_\_\_\_ method is used to check whether togglebutton is in pressed state or release state.
7. JRadioButton generates \_\_\_\_\_.
8. \_\_\_\_\_ a set of components by linking them with tabs.
9. \_\_\_\_\_ theSingleSelectionMode.
10. To create swing applet we need to extend \_\_\_\_\_ class
11. Swing introduced in \_\_\_\_\_.
12. To set close operation on Frame \_\_\_\_\_ function is used.
13. JComopnent class derived form \_\_\_\_\_ and \_\_\_\_\_ class.
14. JList is based on \_\_\_\_\_ different models.
15. You can selectively prevent a field from being saved through the use of the \_\_\_\_\_ keyword.
16. JList components generate \_\_\_\_\_ event.
17. There are \_\_\_\_\_ different types of property in Java bean.
18. \_\_\_\_\_ exception is thrown by Constrained Property.
19. A Bean that has a \_\_\_\_\_ property generates an event when an attempt is made to change its value.
20. A Bean that has a \_\_\_\_\_ property generates an event when the property is changed.

**Que 5: True or false.**

1. MVC stands for Model View Controller.
2. We can create JLabel in 4 different ways.
3. We can create JButton in 4 different ways.
4. To set the current action command when particular button is pressed setActionCommand().
5. ImageIcon class is used to create icon for Label.
6. JButton component has a 2 different states: push and release.
7. Immediate super class for JCheckBox class is JToggleButton.
8. isSelected() method is used to check wethertogglebutton is in pressed state or release state.
9. JRadioButton generates action events.
10. JScrollPane manages a set of components by linking them with tabs.
11. JTabbedPane uses theSingleSelectionMode.
12. JTabbedPane have 4 different types of constructors.
13. To create swing applet we need to extend Applet class
14. Swing introduced in 1998
15. To set close operation on Frame setDefaultCloseOperation function is used
16. JComopnent class derived form Container and component.
17. You can selectively prevent a field from being saved through the use of the Transient keyword.
18. JList is based on three different models.

19. JList components generate ListSelectionEvent. There are three different types of property in Java bean.

#### Unit 6: JDBC

##### Que 1: Short Questions Answer.

1. What is the use of DriverManager?
2. Write database connection URL syntax for MySQL Connector.
3. Why Driver-1, i.e., JDBC-ODBC Driver is called 'Bridge Driver'?
4. How can you access column name from ResultSet?
5. Why Driver-1, i.e., JDBC-ODBC Driver is called 'Bridge Driver'?
6. Define callable statement.
7. Define scrollable result set.
8. Write a use of executeQuery() method.
9. Write a use of updateRow() method.
10. Which method is use to get the auto-generated key?
11. Define metadata in the context of J2EE.
12. What does setAutoCommit do?
13. If I forgot to close ResultSet, which error shall generated?
14. Is it necessary to close a connection? Why?

##### Que 2: Brief Questions Answer.

1. State the difference between PreparedStatement and CallableStatement.
2. When to use PreparedStatement?
3. Write code for retrieving column values from rows.
4. Write a snippet to load JDBC/ODBC bridge and connect to the database.
5. Write a snippet to insert the data into database using JDBC/ODBC bridge.
6. Write a snippet to update the ResultSet.
7. Write a snippet to delete the row in the ResultSet.
8. Write a snippet to insert the row in the ResultSet.
9. What's the difference between TYPE\_SCROLL\_INSENSITIVE , and TYPE\_SCROLL\_SENSITIVE?
10. How can you move the cursor in scrollable result sets?

##### Que 3: Long Questions Answer.

1. Explain JDBC drivers in detail.
2. With suitable example explain how to call a stored procedure using JDBC.
3. Discuss various exceptions in JDBC.
4. What is the use of PreparedStatement in JDBC? List out various methods of PreparedStatement and explain with suitable example.
5. How the transaction is carried out using JDBC API? Explain with example.
6. What is the use of ResultSet in JDBC? Write a JDBC code for view list of records from a table using parameterized query.
7. Write a note on JDBC process.
8. What is the CallableStatement? Explain with an appropriate example.
9. List out the most commonly used metadata with brief explanation.
10. Write a code to show the use of ResultSetMetaData class.
11. Describe the solution provided by Java to connect to database.
12. Explain the major components provided by JDBC.
13. Describe the main types of JDBC drivers with example.
14. Explain difference between the DataSource and DriverManager.

15. Describe the parameters you need to configure to establish a database connection using jdbc.
16. If a faulty program which throws a SQLException saying no suitable driver, what are the problems the program might have?
17. Explain how to provide the offline manipulation ability for the data in a database table.
18. How does the JDBC handle the stored procedure in certain database system.
19. Explain the savepoint concept in JDBC 3.0 with examples.
20. Write a sample program that can connect to an oracle database using JDBC API with configuration provided by the end user.
21. Write an interactive program that can update and delete employee information via an employee database using the statement class.
22. Write an interactive program that can update and delete employee information via an employee database using the prepared statement class.
23. Write an interactive program that can query employee information via an employee database.
24. Explain the JDBC Architecture.

**Que 4: Multiple Choices Question Answer.**

1. The JDBC-ODBC Bridge supports multiple concurrent open statements per connection?
  - A. Yes
  - B. B.No
  - C. C.May Be
  - D. D. May be Yes
2. What are the new features added to JDBC 4.0?
  - A. DataSet implementation of SQL using Annotations
  - B. SQL exception handling enhancements
  - C. both A & B
  - D. None of these
3. Which are thw new features adding in to the JDBC 4.0 ?
  - A. Auto-loading of JDBC driver class
  - B. Connection management enhancements
  - C. Support for RowId SQL type
  - D. All of the above
4. Steps in writing a Java program using JDBC?
  - A. Load the RDBMS specific JDBC driver because this driver actually communicates with the database
  - B. Create JDBC Statement object. This object contains SQL query.
  - C. Execute statement which returns resultset(s). ResultSet contains the tuples of database table as a result of SQL query.
  - D. All of above.
5. what is the main components of JDBC ?
  - A. Driver Manager
  - B. Driver
  - C. Connection
  - D. Both a & b
6. What is JDBC Driver interface
  - A. Java.sql.connection
  - B. Statement



- C. Java.connection
  - D. Both a & b
7. Which statements about JDBC are true?
- A. JDBC is an API to connect to relational-, object- and XML data sources
  - B. JDBC stands for Java DataBase Connectivity
  - C. JDBC is an API to access relational databases, spreadsheets and flat files
8. Which packages contain the JDBC classes?
- A. Java.jdbc and Javax.jdbc
  - B. Java.jdbc and Java.jdbc.sql
  - C. Java.sql and Javax.sql
  - D. Java.rdb and Javax.rdb
9. Which type of driver provides JDBC access via one or more ODBC drivers?
- A. Type 1 Driver
  - B. Type 2 Driver
  - C. Type 3 Driver
  - D. Type 4 Driver
10. Which type of driver converts JDBC calls into the network protocol used by the database management system directly?
- A. Type 1 Driver
  - B. Type 2 Driver
  - C. Type 3 Driver
  - D. Type 4 Driver
11. Which type of Statement can execute parameterized queries?
- A. Prepared Statements
  - B. Parameterized statements
  - C. PreparedStatement and CallableStatement
  - D. All kinds of Statements
12. How can you retrieve information from a ResultSet?
- A. By invoking the method get(..., String type) on the ResultSet, where type is the database type
  - B. By invoking the method get(..., Type type) on the ResultSet, where Type is an object which represents a database type
  - C. By invoking the method getValue(...), and cast the result to the desired Java type.
  - D. By invoking the special getter methods on the ResultSet: getString(...),getBoolean (...), getClob(...),...
13. How can you execute DML statements (i.e. insert, delete, update) in the database?
- A. By making use of the InsertStatement, DeleteStatement or UpdateStatement classes.
  - B. By invoking the execute(...) or executeUpdate(...) method of a normal Statement object or a sub-interface object thereof
  - C. By invoking the executeInsert(...), executeDelete(...) or executeUpdate(...) methods of the DataModificationStatement object
  - D. By making use of the execute(...) statement of the DataModificationStatement object
14. How do you know in your Java program that a SQL warning is generated as a result of executing a SQL statement in the database?
- A. You must catch the checked SQLException which is thrown by the method which executes the statement.
  - B. You must catch the unchecked SQLWarningException which is thrown by the method

- which executes the statement.
- C. You must invoke the `getWarnings()` method on the `Statement` object (or a sub interface thereof)
  - D. You must query the `ResultSet` object about possible warnings generated by the database.
15. What is, in terms of JDBC, a `DataSource`?
- A. A `DataSource` is the basic service for managing a set of JDBC drivers
  - B. A `DataSource` is the Java representation of a physical data source
  - C. A `DataSource` is a registry point for JNDI-services
  - D. A `DataSource` is a factory of connections to a physical data
16. What is the meaning of `ResultSet.TYPE_SCROLL_INSENSITIVE`
- A. This means that the `ResultSet` is insensitive to scrolling
  - B. This means that the `ResultSet` is sensitive to scrolling, but insensitive to updates, i.e. `notupdateable`
  - C. This means that the `ResultSet` is sensitive to scrolling, but insensitive to changes made by others
  - D. The meaning depends on the type of data source, and the type and version of the driver you use with this data source
17. Are `ResultSet`s updateable?
- A. Yes, but only if you call the method `openCursor()` on the `ResultSet`, and if the driver and database support this option
  - B. Yes, but only if you indicate a concurrency strategy when executing the statement, and if the driver and database support this option
  - C. Yes, but only if the `ResultSet` is an object of class `UpdateableResultSet`, and if the driver and database support this option
  - D. No, `ResultSet`s are never updateable. You must explicitly execute DML statements
18. What statements are correct about JDBC transactions (2 correct answers)?
- A. A transaction is a set of successfully executed statements in the database
  - B. A transaction is finished when `commit()` or `rollback()` is called on the `Connection` object,
  - C. A transaction is finished when `commit()` or `rollback()` is called on the `Transaction` object
  - D. A transaction is finished when `close()` is called on the `Connection` object

**Que 5: Fill in the blank.**

1. To enable manual- transaction support instead of the auto-commit mode that the JDBC driver uses by default, use the `Connection` object's \_\_\_\_\_ method.
2. The JDBC classes are contained in the Java package \_\_\_\_\_.
3. An extension to the basic JDBC API is in \_\_\_\_\_.
4. \_\_\_\_\_ object which is the basic service to manage JDBC drivers and initialize a connection object.
5. Suppose there is a driver class `org.sqljdbc.Driver`, \_\_\_\_\_ is used to initialize the driver.
6. JDBC-ODBC bridge is a \_\_\_\_\_ driver.
7. Suppose the program using the JDBC `Statement` class to execute SQL statement, the \_\_\_\_\_ method is used to update such as SQL insert, update and delete.
8. The \_\_\_\_\_ method is used to execute SQL queries.
9. \_\_\_\_\_ is the default type result set which only allows forward iteration.
10. \_\_\_\_\_ result set supports scrollable and is not sensitive to updates of the database by made others.

11. \_\_\_\_\_ resultset supports scrollable ans is also sensitive to updates made by others.
12. There are also two concurrency modes that control whether the resultset instance is updatable or not : \_\_\_\_\_ indicates that the resultset instance is not updatable.
13. A \_\_\_\_\_ set of one or more statements that are executed together as a single unit.
14. In order to manually control the transaction operations such as commit or rollback, you have to first set the auto commit to false by using \_\_\_\_\_.
15. \_\_\_\_\_ method is used to dynamically load the driver's class file into memory, which automatically registers it.
16. You can establish a connection using the \_\_\_\_\_ method.
17. A \_\_\_\_\_ statement is used for creating a new database.
18. \_\_\_\_\_ interface with all methods for contacting a database.
19. \_\_\_\_\_ class handles any errors that occur in a database application.

**Que 6: True or false.**

1. All JDBC driver are not scrollable.
2. The database transaction consists of the set of SQL statement.
3. A table in the database consists of row and column.
4. Statement objects returns SQL query result as ResultSet object.
5. The primary key uniquely identifies each row in a table.
6. Merging the rows from multiple database tables is called joining.
7. Database is the organized collection of data.
8. Foreign key is a set of columns whose values match the primary-key values of another table.
9. Connection interface helps to manage the connection between Java program and a database.
10. To enable manual- transaction support instead of the auto-commit mode that the JDBC driver uses by default, use the Connection object's setAutoCommit() method.
11. JDBC stands for Java Database Control.
12. Driver Manager Class manages a list of database drivers.
13. Connection interface handles the communications with the database server.
14. Driver interface with all methods for contacting a database.
15. Statement objects hold data retrieved from a database after you execute an SQL query using Statement objects.
16. SQLException class handles any errors that occur in a database application.
17. The Java.sql and Javax.sql are the primary packages for JDBC 4.0.
18. SQL stands for Structured Query Language.
19. The EDIT DATABASE statement is used for creating a new database.
20. The DROP DATABASE statement is used for Editing an existing database.
21. Type 1 driver, a JDBC bridge is used to access ODBC drivers installed on each client machine.
22. The Oracle Call Interface (OCI) driver is an example of a Type 1 driver.
23. Type 2 driver, JDBC API calls are converted into native C/C++ API calls which are unique to the database.
24. Type 3 driver, a three-tier approach is used to accessing databases.
25. Your application server might use a Type 1, 2, or 4 driver to communicate with the database.
26. A pure Java-based driver that communicates directly with vendor's database through socket connection.

27. Class.forName() method is used to dynamically load the driver's class file into memory, which automatically registers it.
28. You can establish a connection using the DriverManager.getConnection() method.
29. To close above opened connection you should call close() method.