MC1705 – Internet Programming

Third Semester

1. What is Internet?
   The Internet is a network of networks that connects computers all over the world. The internet operates world wide using a common set of communication protocols.
2. What is IP?
   IP stands for Internet Protocol. Computers connected to the internet communicate by the protocol IP.
3. What is TCP?
   TCP stands for Transmission control Protocol. This Protocol is used to communicate with the nodes in the internet with acknowledgement
4. What is ARPANET?
   ARPANET stands for Advanced Research Project Agency Network. The U.S.Military funded a network in 1969 called ARPANET.
5. List out the services provided by the Internet?
   Electronic Mail, World Wide Web, FTP, Telnet, Gopher, Chat
6. What do you mean by World Wide Web?
   WWW is a distributed system of inter linked pages that include text, pictures, sound and other information. It enables easy access to the information available on the internet.
7. What FTP?
   FTP stands for File Transfer Protocol. It is Internet software for transferring files form one computer to another.
8. Distinguish File Upload and Down Load?
   The process of transferring a file from a network computer to local computer is known as down loading. The process of transferring a file from local computer to a network computer is called up Loading.
9. What is the use of Gopher?
   It is an access and retrieval system covering a wide range of information, from reference materials to magazine article to government documents and speeches.
10. What is Telnet?
It is software that allows one computer to connect to another computer and make use of the other information.
11. Write note on Internet Addresses.
    Numerical computer names that uniquely identify each computer on the Internet. Each address consists of four bytes, and each byte represents a decimal number from 0 to 255. This address is often represented by four decimal numbers separated by dots.
12. What is newsgroup?
    An on-line forum that allows users from all over the world to participate in a discussion about a specific topic.

13. What do you meant by Domain Name System?

A distributed naming scheme in which unique names are assigned to computers on the Internet.

14. Write note on the protocol FTP.

File transfer- A way of transferring files from one computer to another computer; using a network

15. Write note on HTML element FRAMESET.

Frameset-An HTML features that allows you to divide a browser's window into several independent parts.

16. What are absolute and relative URLs?

An absolute URL is complete in that it contains all the components of a URL

A relative URL as the name implies, relates to some base URL and may be used in any places in an HTML document.

17. What is MIME?

Multipurpose Internet Mail Extensions (MIME) - A system that is used by mailers and Web browsers to identify file contents by file extensions

18. What are Web browsers?

Browser- A software Application that provides an interface between users and the Internet. Netscape's navigator and Microsoft's Internet explorer are two popular browsers. Browsers are also called Web Clients.

19. What is Search Engine?

Search Engine-A search tool that allows a user to enter queries. The program responds with a list of matches from its database. A relevancy score for each match and click able URL are usually returned.

20. What are the values of lowest address and highest address in class B addressing? Write them in dotted decimal form.

Lowest address-10000000.0.0.0

Highest address-10111111.255.255.255

21. Define the term "electronic-mail".

e-mail -Messages that are sent electronically over a network.

22. What is Network?

Interconnection of two or computers is known as network that enables to share the common resources.

23. Write short notes on LAN?

Local Area Network-LAN consists of computers that are geographically close together. A LAN uses cables to connect its users.

24. Write short notes on WAN?

Wide Area Network-WAN consist of computer systems that are further apart and are connected by telephones lines or radio waves. Data is send over the Telephone lines as opposed to cables.

25. Write short notes on MAN?

Metropolitan Area Network-MAN is networks designed for a town or city.

26. Write short notes on CAN?

Campus area Network-CAN, the computers within a limited geographic area such as a campus or military base.

27. Write short notes on HAN?

HAN stands for Home Area Network. Network contained with in a users home that connects a persons digital device.

28. What is IP address?

Each host computer on the Internet has a unique number called IP address. IP address is in the format xxx.xxx.xxx.xxx which has xxx is a number from 0 to 255.

29. What is Domain Name?

Each host computer on the Internet has a unique number called IP address. And also have a name know as host name. The name of each host computer consists of a series of words separated by dots.

30. What is DNS server?

A DNS server translates the numeric IP addresses to the corresponding Domain name.

31. What is Client Server Model?

It is a network architecture in which each computer on the network is either a client or a server. Servers are powerful computer that offers services to the client computers. Clients are system in the network which request the service from the server.

32. What is TLD?

TLD stands for Top Level Domain. It comes last in the domain name. the sub domain comes directly before the TLD.

33. Write short notes on SMTP?

SMTP stands for Simple Mail Transfer Protocol. This is used to transfer e-mail in the internet.

34. What is USENET?

USENET is a distributed system of messages like a world wide chat system because so many messages are send every day; they are divided into news groups. With each news groups concentrating on one topic.

35. Write short notes on ARCHIE?

ARCHIE stands for archive minus the letter 'v'. Archie is a program that functions as a catalog and index of FTP archives.

36. Write short notes on WAIS?

WAIS stands for Wide Area Information services. WAIS is an Internet search tool that is based on the z39.0 standard which describes a protocol.

37. What do you mean by World Wide Web?

WWW is a distributed system of inter linked pages that include text, pictures, sound and other information. It enables easy access to the information available on the internet..

38. Write short notes on HTTP?

Http is application protocol with the lightness and speed necessary for the distributed collaborative hypermedia information system.

39. What is FTP?

The basic Internet File Transfer Protocol. FTP, which is based on TCP/IP, enables the fetching and storing of files between hosts on the Internet.

40. What is GUI?

Graphical User Interface. Refers to the techniques involved in using graphics, along with a keyboard and a mouse, to provide an easy-to-use interface to some program.

41. What is URL?

URL stands for Uniform Resource Locater. Three are two types of URL

Absolute URL – This include complete path to the file location including all the names of directories and sub directories.

Relative URL – These are like shorthand that tells the browser to go backward one or more directories to find the file.

42. Define Scml?

The Source Code Markup Language (SCML) is a formatting language that can be used to create templates for source code that needs to be output by Flick.

43. What is Mailing List?

A group of users with a shared interest, whose e-mail address are kept in an electronic list that can be used to send e-mail to each member on the list.

44. What are the key elements in a protocol. ?

    a) Syntax - Includes data format and Signal levels

    b) Semantics – Includes control information for co-coordinating & Error handling

    c) Timing – Includes speed matching and sequencing

45. What is HTML?

HyperText Markup Language. This is a file format, based on SGML, for hypertext documents on the Internet. It is very simple and allows for the embedding of images, sounds, video streams, form fields and simple text formatting. References to other objects are embedded using URLs. HTML is a plain text file with commands <markup tags> to tell the Web browsers how to display the file.

46. How do you change the color of background or text in HTML? Include the element "bgcolor" with a color code in your body tag: <BODY BGCOLOR="#ffffff" TEXT="#000000" LINK="#cc0000" VLINK="#000066" ALINK="#ffff00">

47. How do you use a picture as the background in HTML? Include the element "background" with the name of the graphics file: <BODY BACKGROUND="gumby.gif" BGCOLOR="#ffffff" TEXT="#000000" LINK="#cc0000" VLINK="#000066" ALINK="#ffff00">

48. How do you add music to a web page?

<A HREF="http://www.snowhawk.com/sounds/hvnearth.mid">Heaven on Earth</A>

49. How do you align text next to a graphic in HTML? <IMG SRC="wflower.jpg" WIDTH="25" HEIGHT="25" ALIGN="top" BORDER="0" ALT="wildflower photo"> Photo of wildflowers in Texas</A> How do you make a graphic a link? <AHREF="http://www.snowhawk.com/wildlife.html"><IMG SRC="leopard.jpg" WIDTH="25" HEIGHT="25" ALIGN="top" BORDER="0" ALT="link to wildlife"></A>

50. How do you make a new paragraph in HTML?
Inserting the <P> tag at the beginning of your paragraph will drop the text down two lines. (If you insert the <BR> tag, it will drop your text down one line.)

51. How do you make headings and text larger or smaller?
There are 6 sizes to the heading tags:
This is using the <H1> tag
This is using the <H2> tag
This is using the <H3> tag
This is using the <H4> tag
This is using the <H5> tag
This is using the <H6> tag

52. How do you make text show as bold?
Placing the <B>tag before the text will make everything bold, until you close the tag with</B> (Or using <STRONG>tags</STRONG > will do the same.)

53. How do I make text show in italics?
Placing the <I>tag before the text will make everything in italics, until you close the tag with</I> (Using <EM>*emphasis tags*</EM > will do the same.)

54. How would you make all text on a page green and a little larger than normal, but make all headings yellow?
Put the following at the beginning of the Web page:
<BODY TEXT="green"><BASEFONT SIZE=4>
Then make each heading look like this:
<H1><FONT COLOR="Yellow">Heading goes here </FONT></H1>

55. Write the HTML to create the following odered list.
X. Xylophone
Y. Yak
Z. Zebra

<OL TYPE ="A" START = "24">
<LI> Xylophone
<LI>YAK
<LI>Zebra
</OL>
The following alternative will also do the same things.
<OL TYPE ="A"<LI VALUE ="24">Xylophone<LI>Yak<LI>Zebra</OL>

56. How would you insert a single word and put a square bullet in front of it?
<UL TYPE="Square"><LI>Supercalifragilisticexpealidocious</UL>

57. How would you insert an image file named elephant.jpg at the very top of a Web page?
Copy the image file into the same directory folder as the HTML text file and type <IMG SRC> immediately after the <BODY> tag in the HTML text file

58. How would you give a Web page a black background and make all text, including links, bright green?
Put the following at the beginning of the Web page:
<BODY BGCOLOR="black">
The following would do the same thing"
<BODY BGCOLOR ="#000000"

TEXT="#00FF00" LINK="00FF00" VLINK="#000000">

59. How would you make an image file named texture.jpg appear as a background tile?
<BODY BACKGROUND="texture.jpg"
TEXT="White" LINK="red" VLINK="blue" ALINK="black">

60. How would you wrap text around the right side of an image, leaving 40 pixels of space between the image and the text?
<IMG SRC="myimage.gif" HSPACE=40 VSPACE=40 ALIGN="left">Text goes here

61. How could you insert exactly 80 pixels of blank space between two paragraphs of text?

Create a small image that is all one color, and save it as nothing.gif with that color set to be transparent. Then put the following tag between the two paragraphs of text:

<IMG SRC="nothing.gif" WIDTH=1 HEIGHT=80>

62. How would you write the HTML to draw a rule 20 pixels wide?
<HR WIDTH=20>

63. If you have a circular button that links to another page, how do you prevent a rectangle from appearing around it?
Use the BORDER=0 attribute, like this:
<A HREF="another_page.htm"><IMG SRC="circle.gif" BORDER=0></A>

64. List out the features of Java?

- Simple
- Architecture-neutral
- Object-oriented
- Portable
- Distributed
- High-performance
- Interpreted
- Multithreaded
- Robust
- Dynamic
- Secure

65. What is byte code?
Java compiler translates a Java program into an intermediate language called *Java bytecodes*--the platform-independent codes interpreted by the Java interpreter.

66. What are the various applications of Java
- Applets
- Networking
- Internationalization
- Security
- Object serialization
- Java Database Connectivity (JDBC)

67. Why do java is called platform independent?
Java is called platform independent language because 100% Pure Java programs are compiled into machine-independent bytecodes, they run consistently on any Java platform

68. What is branching?

When a program breaks the sequential flow and jumps to another part of the code ,it is called branching.

69. What is conditional and unconditional branching?

When the branching is based on a particular condition, it is known as conditional branching. If branching takes place without any decision, it is known as unconditional branching.

70. What is the use of switch statement?

The switch statement tests the value of a given variable against a list of case values and when a match is found,a block of statements associated with that   case is executed.

71. Write down the control flow statement available in java?

```
While
```

The general syntax of **t**he `while` statement is:

```
while (expression) {
    statement
}
```

```
do-while
```

```
The general syntax of the do-while is:
    do {
        statement(s)
    } while (expression);
```

```
for
```

The general form of the `for` statement can be expressed like this:

```
for (initialization; termination; increment)
{
 statement
}
```

72. What are the decision-making statements available in java?

The if/else Statements

the simple form of `if` can be written like this:

```
if (expression) {
    statement(s)
}
if (response == OK) {
    // code to perform OK action
} else {
    // code to perform Cancel action
}
```

The switch Statement
switch(expression)
{
case value1 :

statements;

break;

case value 2 :

```
                                statements;
        break;
                case value 3 :
                                statements;
        break;
        default :
        }
```

73. What is the use of the ?: operator?

It is used for making two-way decisions,it is a combination of ? and : ,and takes three operands. This operator is known as ternary operator.

The general form is given as

Conditional expression ? expression1 : expression2

The conditional operator is evaluated first.If the result is true,expression1 is evaluated, otherwise the expression2 is evaluated.

74. What are known as three pillars of object-oriented programming?

All object-oriented languages employ three core principles, namely,

- Encapsulation
- Inheritance and
- Polymorphism

These are referred to as three 'pillars' of OOP.

75. What is encapsulation? What is its role in object-oriented programming?

Encapsulation provides the ability to hide the internal details of an object from its users. The outside user may not be able to change the state of an object directly. Encapsulation is implemented using the access modifier keywords public, private and protected. The concept of encapsulation is also known as data hiding or information hiding.

76. Define Abstractions?

Abstraction is one of the object-oriented concepts; it is nothing but expresses the essential things not much in detail.

77. What is inheritance?

Inheritance is the process by which one object acquires the properties of another.

78. Define polymorphism?

Polymorphism is a feature that allows one interface to be used for ageneral class of action.

79. What is Unicode?

Java use Unicode to represent a character. Unicode defines a fully international character set that can represent all of the characters found in all human languages.

80. What is the scope and lifetime of variables in java?

The variable has the scope only with in the block, where it is declared. They are created when their scope is entered, and destroyed when their scope is left.

81. What do you mean by casting?

Conversion of data into one type to another type is known as casting. They are classified into two types explicit casting and implicit casting.

Explicit casting – two incompatible types need explicit conversion

(target-type) value

Implicit casting – it is also known as automatic type conversion . When the two types are compatible that is the destination type is larger than the source type automatic type conversion will be tack place.

82. What will be the output of the following statement?

A= 64;

    System.out.println(A<<2)

Answer : 256

83. What will be the output of the following statement?

A= 32;

    System.out.println(A>>2)

   Answer : 8

84. What is the use of break statement?

A Java(TM) programming language keyword used to resume program execution at the statement immediately following the current statement. If followed by a label, the program resumes execution at the labeled statement

85. What is the use of continue statement?

A Java(TM) programming language keyword used to resume program execution at the end of the current loop. If followed by a label, "continue" resumes execution where the label occurs.

86. Define Class and objects.

    A class is prototype, that defines the variables and the methods common to all objects of a certain kind. An object is a software bundle of related variables and methods. Software objects are often used to model real-world objects you find in everyday life.

87. What is an instance variable of a class?

    Any item of data that is associated with a particular object. Each instance of a class has its own copy of the instance variables defined in the class. Also called a field.

88. Define class Variable?

    A data item associated with a particular class as a whole--not with particular instances of the class. Class variables are defined in class definitions. Also called a static field.

89. What is static method?

    A method that is invoked without reference to a particular object. Class methods affect the class as a whole, not a particular instance of the class. Also called a static method.

90. What is the use of 'this' key word?

    'this' keyword can be used to represent the current object. And also used to hide the instance variable.

91. What is Garbage collection?

    When there is no more reference to an object is found jvm collect the memory automatically. This process is known as Garbage Collection.

92. What is a destructor and how it is implemented in java?

    The destructor is invoked when an object is destroyed. In java a mechanism called finalization is used to handle the destructor. It needs to override a method called

Protected void finalize()
93. Define method overloading?

Two or methods with in the same class have the same name, with different signature.

94. What is the difference between call-by-value and call–by- reference?

In this case of call-by-value only the copies of the parameter are passed. So that changes made to the parameter has no effect on the argument used to call it.In this case of call-by-reference a reference to the argument is passed to the parameter. So that changes made to the parameter change the argument used to call it.

95. What is an access specifier?

A member of a class can be accessed is determined by the access specifier. Java supports the following access specifier
Public
Private
Protected

96. Define method overriding?

Providing a different implementation of a method in a subclass of the class that originally defined the method. That is defining one method with same name and signature

97. Write short notes on final key word?

A Java(TM) programming language keyword. You define an entity once and cannot change it or derive from it later. More specifically: a final class cannot be subclassed, a final method cannot be overridden and a final variable cannot change from its initialized value.

98. Define abstract class and method?

A class that contains one or more *abstract methods*, and therefore can never be instantiated. Abstract classes are defined so that other classes can extend them and make them concrete by implementing the abstract methods. Abstract method is a method that has no implementation

99. Distinguish between public, private and protected?

Public signifies that the method or variable can be accessed by elements residing in other classes. Private signifies that the method or variable can only be accessed by other elements of its class. Protected signifies that the method or variable can only be accessed by elements residing in its class, subclasses, or classes in the same package.

100.How we can get the size of an array?

The size of an array can be get by using the statement
arrayname.length

101. Why two classes are used to handle String in java?

The Java platform provides two classes, `String` and `StringBuffer`, that store and manipulate strings-character data consisting of more than one character. The `String` class provides for strings whose value will not change. The `StringBuffer` class provides for strings that will be modified; you use string buffers when you know that the value of the character data will change. You typically use string buffers for constructing character data dynamically.

102. What is Wrapper class?

An object that encapsulates and delegates to another object to alter its interface or behavior in some way. All the primitive data types has it is own wrapper class.

103. Define sub class?

Sub class is a class that is derived from a particular class, perhaps with one or more classes in between. A *subclass* is a class that extends another class. A subclass inherits state and behavior from all of its ancestors.

104. What is super class?

A class from which a particular class is derived, perhaps with one or more classes in between.

105. What is the use of super keyword?

A Java(TM) programming language keyword used to access members of a class inherited by the class in which it appears.

106. List out the various types of inheritance?

Simple inheritance - One base class and one derived class. Multilevel inheritance - a sub class derived from another sub class   Hierarchical inheritance – two or more sub class have the same base class

107. Define Interface?

An *interface* is a named collection of method definitions (without implementations). An interface can also declare constants. All the methods declared in the interface are abstract methods by default. And all the data members are static final members.

108. What are the difference between the abstract class and interface?

- An interface cannot implement any methods, whereas an abstract class can.
- A class can implement many interfaces but can have only one superclass.
- An interface is not part of the class hierarchy. Unrelated classes can implement the same interface

109. How is an interface is used in java?

A class that implements an interface adheres to the protocol defined by that interface. To declare a class that implements an interface, include an `implements` clause in the class declaration. A class can implement more than one interface (the Java platform supports multiple inheritance for interfaces), so the `implements` keyword is followed by a comma-separated list of the interfaces implemented by the class.

110. Define Package?

A *package* is a collection of related classes and interfaces providing access protection and namespace management. To make classes easier to find and to use, to avoid naming conflicts, and to control access, programmers bundle groups of related classes and interfaces into packages.

111. How a Package is created in java?

To create a package and put a class or an interface in it, put a `package` statement at the top of the source file in which the class or the interface is defined. For example, the following code appears in the source file `Circle.java` and puts the `Circle` class in the `graphics` package:

```
package graphics;
```

```
public class Circle extends Graphic implements
Draggable {
    . . .
}
```

To import a specific member into the current file, put an import statement at the beginning of the file before any class or interface definitions but after the package statement, if there is one.

import graphics.Circle;

112. What do you mean by API?

Application Programming Interface. The specification of how a programmer writing an application accesses the behavior and state of classes and objects.

113. What do you mean by core packages?

The required set of APIs in a Java platform edition, which must be supported, in any and all compatible implementations.

114. Define Thread?

```
     The basic unit of program execution. A process can
have    several   threads   running   concurrently,   each
performing a different job, such as waiting for events
or  performing  a  time-consuming  job  that  the  program
doesn't need to complete before going on. When a thread
has  finished  its  job,  the  thread  is  suspended  or
destroyed.
```

115. How Threads are created in Java?

Threads are created in two ways. They are by extending the Thread class and by implementing Runnable interface.

116. What are the various states of a thread?

```
     The following figure shows the states that a
thread can be in during its life and illustrates which
method calls cause a transition to another state.
```
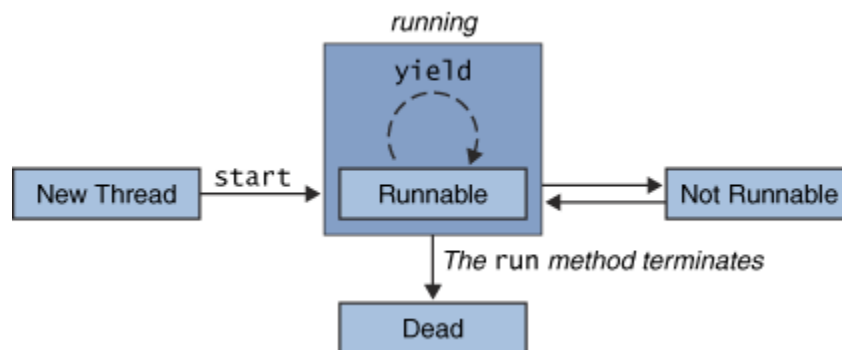

117. What is multithreaded programming?

Multithreaded program contains 2 or more parts that can run concurrently. Each part of such a program is called a thread, and each thread defines a separate path of execution.

118. What is thread priority?

Java assigns to each thread a priority that determines how that thread should be treated with respect to the others. Thread priorities are integers that specify the relative priority of one thread to another.

119. Define Synchronization?

In the Java programming language, when Synchronized is applied to a method or code block, guarantees that at most one thread at a time executes that code. This process is known as Synchronization.

120. What do you mean by Thread Scheduling?

Execution of multiple threads on a single CPU in some order is called *scheduling*. The Java runtime environment supports a very simple, deterministic scheduling algorithm called *fixed-priority scheduling*. This algorithm schedules threads on the basis of their priority relative to other Runnable threads.

121. Define Dead Lock?

A special type of error that relates specifically to multitasking is dead lock, which occurs when two threads have a circular dependency on a   pair   of   synchronized   objects.

122.What is Thread Pool?

A *thread pool* is a managed collection of threads that are available to perform tasks. Thread pools usually provide:

- •Improved performance when executing large numbers of tasks due to reduced per-task invocation overhead.
- •A means of bounding the resources, including threads, consumed when executing a collection of tasks.

123.What is an Exception?

An *exception* is an event that occurs during the execution of a program that disrupts the normal flow of instructions during the execution of a program.

124.How an Exception is handled in java?

A program can catch exceptions by using a combination of the `try`, `catch`, and `finally` statements. The `try` statement identifies a block of code in which an exception can occur. The `catch` statement identifies a block of code, known as an exception handler, that can handle a particular type of exception

122. What is the use of Finally block?

The `finally` statement identifies a block of code that cleans up regardless of whether an exception occurred within the `try` block. A `try` statement must be accompanied by at least one `catch` statement or a `finally` statement and may have multiple `catch` statements.

123. Distinguish between Throw and Throws?

Throw Java programming language keyword that allows the user to throw an exception or any class that implements the "throwable" interface. Throws keyword can be used in method declarations that

specify which exceptions are not handled within the method but rather passed to the next higher level of the program.

124. How Reader and Writer Classes are used in java?

Reader and Writer are the abstract superclasses for character streams in `java.io.` `Reader` provides the API and partial implementation for *readers*--streams that read 16-bit characters--and `Writer` provides the API and partial implementation for writers--streams that write 16-bit chaacters.

125. What the use of InputStream and OutputStream classes?

To read and write 8-bit bytes, programs should use the byte streams, descendants of InputStram andOutputStream. `InputStream` and `OutputStream` provide the API and partial implementation for *input streams* (streams that read 8-bit bytes) and *output* streams (streams that write 8-bit bytes).

126. What is the use of Data input and ouput streams?

Data input and ouput Streams are used to read or write primitive data types in a machine-independent format.

127. What is the use of Buffered Streams?

Buffered streams, buffer data while reading or writing, thereby reducing the number of accesses required on the original data source. Buffered streams are typically more efficient than similar nonbuffered streams and are often used with other streams.

128. What is filtered Stream?

The `java.io` package provides a set of abstract classes that define and partially implement *filter streams*. A filter stream filters data as it's being read from or written to the stream.

129. What is the use of SequenceInputStream?

SequenceInputStream can be used to create a single input stream from multiple input sources.

130. What is Hot Java ?

An easily customizable Web browser developed by Sun Microsystems, which is written in the Java(TM) programming language.

131. What is an Applet?

Applet is a Java application, which can be executed in JVM, enabled web browsers.

132. What are methods available in the Applet class?

`init` - To *initialize* the applet each time it's loaded (or reloaded).

`start` - To *start* the applet's execution, such as when the applet's loaded or when the user revisits a page that contains the applet.

`stop` - To *stop* the applet's execution, such as when the user leaves the applet's page or quits the browser.

`destroy` – To perform a *final cleanup* in preparation for unloading.

133. Distinguish between paint and update method?

`paint` is basic display method. Many applets implement the `paint` method to draw the applet's representation within a browser page.

`Update is a` method that can use along with `paint` to improve drawing performance.

134. What is AWT?

A collection of graphical user interface (GUI) components that were implemented using native-platform versions of the components. These components provide that subset of functionality which is common to all native platforms. Largely supplanted by the Project Swing component set.

135. List out some UI components available in AWT?

- •Buttons (`java.awt.Button`)
- •Checkboxes (`java.awt.Checkbox`)
- •Single-line text fields (`java.awt.TextField`)
- •Larger text display and editing areas (`java.awt.TextArea`)
- •Labels (`java.awt.Label`)
- •Lists (`java.awt.List`)
- •Pop-up lists of choices (`java.awt.Choice`)
- •Sliders and scrollbars (`java.awt.Scrollbar`)
- •Drawing areas (`java.awt.Canvas`)
- •Menus (`java.awt.Menu`, `java.awt.MenuItem`, `java.awt.CheckboxMenuItem`)
- •Containers (`java.awt.Panel`, `java.awt.Window` and its subclasses)

136. Write some methods, which are used to add UI components in Applet?

`add` – Adds the specified `Component`.

`remove` - Removes the specified `Component`.

`setLayout` - Sets the layout manager.

137. Write the Html code to load an Applet in the browser?

```
<APPLET   CODE=AppletSubclass.class   WIDTH=anInt
HEIGHT=anInt>
</APPLET>
```

138. How parameters are passed to an Applet?

The parameters are passed to an Applet by using param tag

```
<APPLET   CODE=AppletSubclass.class   WIDTH=anInt
HEIGHT=anInt>
<PARAM NAME=parameter1Name VALUE=aValue>
<PARAM NAME=parameter2Name VALUE=anotherValue>
</APPLET>
```

139. Write the attributes of the Applet tag?

```
< APPLET
    [CODEBASE = codebaseURL]
    CODE = appletFile
    [ALT = alternateText]
    [NAME = appletInstanceName]
    WIDTH = pixels
    HEIGHT = pixels
    [ALIGN = alignment]
    [VSPACE = pixels]
    [HSPACE = pixels]
>
[< PARAM NAME = appletParameter1 VALUE = value
>]
```

```
[< PARAM NAME = appletParameter2 VALUE = value
>]
. . .
[alternateHTML]
</APPLET>
```
140. What is the use of *transient* keyword?

A keyword in the Java programming language that indicates that a field is not part of the serialized form of an object. When an object is serialized, the values of its transient fields are not included in the serial representation, while the values of its non-transient fields are included.

141. Write short note on isAlive() and join()?

isAlive() and join() methods are used to determine whether a thread has finished or not. First, you can call isAlive() on the thread. This method is defined by Thread, and its general form is:

final Boolean isAlive()

The isAlive() method returns true if the thread upon which it is called is still running. It returns false otherwise.

While isAlive() is occasionally useful, the method that you will more commonly use to wait for a thread to finish is called join(). The general form is:

final void join() throws InterruptedException

This method waits until the thread on which it is called terminates.

Descriptive Answers

1. Write down the features of java?

- Compiled and interpreted
- Platform-independent and portable
- Object-Oriented
- Robust and secure
- Distributed
- Simple, small and familar
- Multithreaded and interactive
- High performance
- Dynamic and extensible

2. Explain the structure of a typical java program?

Documentation section
Package statement
Import statement
Interface Statements
Class definitions

```
Main Method Class
{
    Main Method Definition
}
```

3. Write an example java program to illustrate method overloading?

```
class method
{ void area(int r)
{ int c;
c=3.14*r*r;
System.out.println ("The area of circle is "+c);}
void area(float r)
{
float c;
c=3.14*r*r;
System.out.println ("The area of circle is "+c);}
}
class methodoverloading
{ public static void main(String args[])
{ method m=new method();
int a;
float x;
System.out.println("Enter the radius of the circle");
a=Integer.parseInt(args[0]);
x=Float.valueOf(args[3].floatValue();
m.area(a);
m.area(x);}
}
```

4. What do you mean by garbage collection? Why do we need finalize() method?

Deallocation of memory allocated dynamically for an object is done automatically in java. The technique that accomplishes this is called garbage collection. When no reference to an object exists, that object is assumed to be no longer needed, and the memory occupied by the object can be reclaimed. There is no explicit need to destroy objects in java. The garbage collection occurs sporadically during the execution of your program.

Finalization is a mechanism provided by java to allow an object to perform some action when it is destroyed. For eg if an object is holding some non-java resource such as a file handle or window character font, then you might want to make sure these resources are freed before a object is destroyed. By using finalization, we can define specific actions that will occur when an object is just about to be reclaimed by the garbage collector.

To add a finalizer to a class, simply define the finalize() method. The general form is:

```
Protected void finalize()
{
//finalization code here
}
```

5. Define multithreaded programming? How multithreading is implemented in java?

Java's multithreading system is built upon the Thread class, its methods, and its companion interface, Runnable. Thread encapsulates a thread of execution. Since you can't directly refer to the ethereal state of a running thread, you will deal with it through its proxy. To create a new thread, your program will either extend Thread or implement the Runnable interface.

A multithreaded programming contains two or more parts that can run concurrently. Each part of such a program is called a thread, and each thread defines a separate path of execution. Multithreading is a specialized form of multitasking. Multithreading enables us to write very efficient programs that make maximum use of the CPU, because idle time can be kept to a minimum.

Main thread is the one that is executed when your program begins. The main thread is important for two reasons:

- It is the thread from which other "child" threads will be spawned.
- Often it must be the last thread to finish execution because it performs various shutdown actions.

A thread can be created by instantiating an object of type Thread. Java defines two ways in which this can be accomplished:

- You can implement the Runnable interface
  To implement Runnable, a class need only to implement a single method called run().
- You can extend the Thread class.
  The extending class must override the run() method, which is the entry point for the new thread. It must also call start() to begin execution of the new thread.

6. Define Synchronization. How it is implemented in java?

Synchronization is the process used to ensure that the resource will be used by only one thread at a time, when two or more threads need access to a shared resource.

Synchronization is implemented in java by using the concept of monitor also called as a semaphore. A monitor is an object that is used as a mutually exclusive lock, or mutex. Only one thread can own a monitor at a given time. When a thread acquires a lock, it is said to have entered the monitor.all the other threads attempting to enter the locked monitor will be suspended until the first thread exists the monitor. These other threads are said to be waiting for the monitor.

Example program using synchronization

7. Explain in detail about typical e-mail system.

8. Describe the features of Newsgroup and IRC in detail .

9. What is the purpose of Telnet ? why is it called transparent ? What are the services offered by it ?

10. What is the need for FTP? What are the features ?

11. Explain about Website Creation Concepts.

12. Write the procedure to create user defined packages . Explain the package with an example.

13. Explain Delegation Event model in Java. Write program in Java using mouse events.

14. Explain the Applet class in java with a simple example program?

15. What are the functions of JDBC drivers ?

16. Describe the anatomy of servlet.

17. Explain Utility Packages

18. Explain any four Input/Output Packages