Code: AC19   Subject: INTERNET & JAVA PROGRAMMING
Time: 3 Hours   Max. Marks: 100

JUNE 2011

NOTE: There are 9 Questions in all.
- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1   **Choose the correct or the best alternative in the following:**   **(2×10)**

a. Internet is a result of the research by _____.

   (A) NASA   **(B)** ISRO
   (C) ARPA   **(D)** IEEE

b. An IP address having all 1's is a special address for

   (A) Limited broadcast   **(B)** Loopback
   (C) Directed broadcast   **(D)** None of the above

c. A POP server

   (A) accepts incoming emails.
   (B) allows a remote machine to access the mailbox.
   (C) stores incoming emails in the appropriate mailboxes.
   (D) None of the above.

d. Which of the following is not a dynamic web page development technology?

   (A) ColdFusion   **(B)** Java Server Pages
   (C) JavaScript   **(D)** PHP

e. The concept of one class acquiring some members of another class is known as

   (A) Abstraction   **(B)** Polymorphism
   (C) Encapsulation   **(D)** Inheritance

f. The base of the hierarchy in Java exception handling mechanism is _____ class.

   (A) Throwable   **(B)** Error
   (C) RuntimeException   **(D)** Exception

g. To compare the contents of two strings _____ can be used.

(A) equals() method   (B) = = operator
(C) compareTo() method   (D) either (A) or (C)

h. AWT allows a programmer to create

(A) Command line interaction based applications
(B) GUI based applications
(C) Applets
(D) Both (B) and (C)

i. Which of the following method is called first when an applet starts execution?

(A) init()   (B) first()
(C) start()   (D) begin()

j. It is not necessary to import any package before using *System.out.println()* because it is present in _____ package which is imported by default in every Java program.

(A) java.io   (B) java.lang
(C) java.util   (D) None of these

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. With the help of examples, briefly explain the three basic categories of address resolution algorithms. **(9)**

b. When IPv4 is working well, then what is the need of having another version of IP? What new features are added in IPv6? What is the format of IPv6 base header? **(7)**

Q.3 a. With the help of a diagram, explain three-way handshake used in TCP to establish and terminate a connection reliably. **(6)**

b. Describe the method of resolution of a domain name into an equivalent IP address. **(6)**

c. What is FTP? How is it different from TFTP? **(4)**

Q.4 a. Write a program to display three buttons having labels "Yes", "No" and "Cancel", respectively. Whenever any button is pressed it should display an appropriate message. For example, if "No" is pressed the program should display "You pressed No". **(8)**

b. What is an active document? How is it different from a dynamic document? How are the active documents represented and translated? **(8)**

Q.5 a. What is a URL? What is it used for? Give its syntax also. **(5)**

b. Rewrite the following: **(2×2.5)**
   (i) *do-while* loop into a *for* loop:

```
int n =1;
double x = 0, s;
do
{
        s= 1.0 / (n*n);
        x= x + s;
        n++;
} while(s > 0.01);
```

   (ii) *for* loop into a *while* loop:

```
int a[] = {49, 28, 14, 117, 66, 35}, sum, i;
for (i = 0, sum = 0; i < a.length; i++) {
    if (a[i] % 3 = = 0)
            continue;
            sum += a[i];
}
System.out.println("Sum = " + sum);
```

c. Explain, with the help of example, the three different use of *final* keyword. **(6)**

Q.6 a. Create a class *Person* with the following instance variables – name, age and father's name. Write a method to read their values from the user and another one to display them also. Extend this class to create a sub class called *Student*. It contains roll no, class and marks obtained as its instance variables. Write a method to populate the members of *Student* class. Also write a method to display the members of *Student* class. Write a program to test the above mentioned classes. **(12)**

b. Explain with the help of examples, the use of *throw* and *throws* clause in exception handling. **(4)**

Q.7 a. What is Java Swing? What are the advantages of swing components over AWT components? **(6)**

b. What are events, event sources and event listeners? Give examples for each of them. **(6)**

c. What is introspection of a Java Bean? Explain. **(4)**

Q.8 a. What are the two types of streams in Java? Write a program using FileOutputStream to write "Java was developed at Sun Microsystems Inc. in 1991" to a file named *Java.txt*. **(8)**

b. What is a servlet? Explain the three methods available in Java that play an important role in the life cycle of a servlet. **(8)**

Q.9 Write short notes on the following:\

    (i) MIME
    (ii) CGI standard
    (iii) IP Telephony
    (iv) Remote Method Invocation (RMI)   **(4×4)**