(2 ½ Hours)   [Total Marks: 75]

N.B.   1) All questions are compulsory.
        2) Figures to the right indicate marks.
        3) Illustrations, in-depth answers and diagrams will be appreciated.
        4) Mixing of sub-questions is not allowed.

Q. 1   Attempt All (Each of 5Marks)   **(15M)**
(a)   Multiple Choice Questions:
1.   Which of these events will be generated if we close an applet's window?
        a) ActionEvent
        b) ComponentEvent
        c) AdjustmentEvent
        d) WindowEvent

2.   Method overriding is combination of inheritance and polymorphism?
        a) True
        b) false

3.   Which of these method is used to tell the calling thread to give up monitor
        and go to sleep until some other thread enters the same monitor?
        a) wait()
        b) notify()
        c) notifyAll()
        d) sleep()

4.   Which of these methods of Character wrapper can be used to obtain the
        character value contained in Character object.
        a) get()
        b) getVhar()
        c) charValue()
        d) getCharacter()

5.   What will be the output of following code?

```
class exception_handling
{
    public static void main(String args[])
    {
        try
        {
            int a[] = {1, 2,3 , 4, 5};
            for (int i = 0; i < 7; ++i)
```

```
                System.out.print(a[i]);
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
         System.out.print("0");
        }
      }
    }
```

a) 12345
b) 123450
c) 1234500
d) Compilation Error

(b) **Fill in the blanks:** (class, raise, java.net, 32, JVM, java.lang, JIT, 64, object, throw java.util, new, throws, JDK)
1. IPV4 address consist of _____ bits in it.
2. To compile, debug and execute java program _____ component is used.
3. All java built in exceptions are located in _____ package.
4. To make a class _____ keyword is used.
5. _____ keyword is used to generate an exception explicitly.

(c) **Answer in 1 – 2 sentences:**
(a) What is JVM? Is it platform independent?
(b) What is the purpose of static method and static variable?
(c) Can we declare main () of java class as private? Why?
(d) Which method is used add an element and corresponding key to a map?
(e) When the constructor of class is invoked?

Q. 2 **Attempt the following (Any THREE)** (15M)
(a) Explain the concept of final methods and final variables with a program.
(b) Write a java program to input a telephone no. and number of calls calculate and display bill amount which includes a fix rent of rupees 400, the first 150 cost are free with excess calls charge 80 paise each.
(c) What do you mean by extending an interface? Explain it with suitable example.
(d) Explain the following string library functions: toCharArray(), getBytes(), getChars(), charAt(), lastIndexOf().
(e) List and explain access specifiers in java.
(f) Differentiate between classes and interfaces.

Q. 3   Attempt the following (Any THREE)   (15M)
(a)   Explain five keywords of exception handling in java.
(b)   What do you mean by synchronising thread? Explain it in detail.
(c)   Write an application that generates custom exception if any value from its command line arguments is negative.
(d)   Differentiate between byte stream classes and character stream classes.
(e)   Discuss any five methods of java.net.ServerSocket class.
(f)   Write a client socket that will accept n names from user and send them to the server. After receiving the names, the server socket should send the message "Good Bye" and close the connection.

Q. 4   Attempt the following (Any THREE)   (15)
(a)   What is layout manager? Explain any two.
(b)   Discus various methods of set interface in detail.
(c)   Demonstrate the working of Integer wrapper class with suitable program.
(d)   Differentiate between Choice and List AWT controls.
(e)   Write an applet program that accepts Principle Amount, No. of Years & Rate of Interest from 3 text fields, when you click "Calculate Interest" button, simple interest should be calculated. When you click on "Final Amount" button, the final amount by adding principle amount and interest should be displayed.
(f)   Briefly Explain: Event Delegation Model

Q. 5   Attempt the following (Any THREE)   (15)
(a)   Write a program to accept 3 numbers from command line and perform their sum.
(b)   Write a java program to copy the content of abc.txt file to pqr.txt file.
(c)   Explain the semantic and functionality of the given statements:
    i)   b.addActionListener(this);
    ii)   repaint()
    iii)   public void paint(Graphics g){..}
    iv)   <applet>tag in java program
    v)   appletviewer
(d)   What is thread? Discuss the various ways of creating threads in java.
(e)   What do you mean by Member Inner class? Explain it with suitable example.

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