97561

M. Sc. (Computer Science) 4th Sem. (CBCS) Examination – July, 2020

JAVA PROGRAMMING

Paper : 17MCS24C1

Time : Three hours]　　　　　　[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note :　Attempt *five* questions in all. All questions carry equal marks.

1. Answer the following questions.　　8 × 2 = 16

    (a) Why is a java class? Write its syntax.

    (b) What is an expression? Give example.

    (c) How can we check the CLASSPATH from command prompt ?

    (d) What is exception ? How is it different from error ?

    (e) How can we set priorities for threads in Java ?

    (f) Write the command to run an applet using applet viewer ?

    (g) Which method is used to draw something in an applet ? Give an example statement.

(h) What is a layout manager ? What is its importance ?

2. (a) Explain different characteristics of Java programming language that make it useful in current scenario of software development and applications ? Does the concept of 'write once, run anywhere, anytime' realized by Java? Has it become the language of the internet ? Justify.   12

(b) What are access specifiers ? Explain different types of access possible in Java programs with examples.   4

3. (a) What is a constructor ? How many kinds of constructors are possible ? Can a constructor in a class call some other constructor of same class ? If yes, show example. Can a class inherit the constructor of its superclass ? Justify your answer. 6

(b) Find the error (if any). Explain your answer. If no error, write the output of generated by the code :

$$3 \times 2 = 6$$

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(i)   for ( ; i=5;);

      System.out.println("Test");

(ii)  int i=0;

      do{

      i++;

      System.out.println(i);

      } while (i<1 0);
```

(iii) int i=1, sum;

while(i<5);

sum=sum+i;

System.out.println(sum);

(c) What do you understand by the concept of Dynamic method dispatch ? 4

4. (a) What is an Exception ? Explain different types of exceptions that are possible in Java. Write a program that uses try-catch-finally blocks for exception handling and explain its working. 8

(b) What is Polymorphism ? Give a Java code example that uses dynamic binding. 8

5. (a) Differentiate between : $2 \times 3 = 6$

(i) Checked and unchecked exceptions

(ii) Inheritance and interface

(b) What are packages? How does package provide access protection ? 4

(c) Write a program to create a user defined exception subclass that throws exception if the sum of two integers is greater than 2019. 6

6. Write short notes that explain the concept and use of the following : $4 \times 4 = 16$

(i) Thread priorities

(ii) Synchronization

(iii) Status window

(iv) Applet Life cycle

7. (a) What are threads ? Explain any two ways to create child threads ? Which approach is better ? 4

(b) Differentiate between: $4 \times 3 = 12$

    (i) process and thread

    (ii) FileReader and Print Writer class

    (iii) volatile and transient keyword

    (iv) Input and Output operations

8. (a) Discuss the procedure of design, code, compile and run an Applet on a browser. 8

(b) What are Layout managers ? How can the choice of layout change the look and feel of controls placed over a frame or window ? 8

9. (a) Explain the applet life cycle along with the features of an applet using suitable diagram. 8

(b) What is AWT ? Explain features of AWT package. What components and containers are used by AWT ? Are these lightweight or heavyweight components ? Why ? 8

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