Professional Course Examination, May 2023

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

(Object-Oriented Programming in Java)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A—OBJECTIVE)

(*Marks* : 25)

SECTION—I

(*Marks* : 15)

A. Tick (✓) the correct answer in the brackets provided : 1×10=10

1. Which of the following is the entry point for executing a Java program?

   (a) Class ( )

   (b) Public ( )

   (c) Static ( )

   (d) Main ( )

2. The following program is an example of—

```
int i = 1;
while (i<=10)
        {
                System.out.println(i);
                i++;
         }
```

(a) entry loop ( )

(b) exit loop ( )

(c) Both *(a)* and *(b)* ( )

(d) None of the above ( )

3. Which of the following is used to communicate between objects?

(a) This ( )

(b) Static ( )

(c) Method ( )

(d) Keyword ( )

4. Which of the following is the concept of polymorphism?

(a) A single action in different way ( )

(b) Uses the property of other classes ( )

(c) Hiding the details and showing an essential information ( )

(d) All of the above ( )

5. Which of the following is compile time error?

(a) Converting invalid string to a number ( )

(b) Misspelling of identifiers and keyword ( )

(c) Dividing an integer by zero ( )

(d) All of the above ( )

6. Which of the following is the reason the output stream designed for?

(a) For performing writing bytes ( )

(b) For performing closing streams ( )

(c) For performing flushing streams ( )

(d) All of the above ( )

7. An interface which is defined inside another interface or class is called

(a) nested interface ( )

(b) combine interface ( )

(c) inside interface ( )

(d) None of the above ( )

8. Which of the following is used to access user define package?

(a) Interface ( )

(b) Import ( )

(c) Package ( )

(d) None of the above ( )

9. _____ is a Java program that can be embedded into a web page and runs inside the web browser and works at client side.

(a) Application ( )

(b) Applet ( )

(c) Both *(a)* and *(b)* ( )

(d) None of the above ( )

10. Which of the following is used to store data and partial results, as well as to perform dynamic linking, return values for methods, and dispatch exceptions?

(a) Panel ( )

(b) Window ( )

(c) Container ( )

(d) Frame ( )

B. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

1. If branching takes place without any decision, it is known as unconditional branching.

(T / F)

2. Dot(.) operator is used to allocate object into a memory.

(T / F)

3. Java finally block is always executed whether exception is handled or not.

(T / F)

4. Multiple inheritance can be successful using interface in Java program.

(T / F)

5. AWT components are lightweight.

(T / F)

SECTION—II

(*Marks* : 10)

C. Answer the following questions : 2×5=10

1. *(a)* List the structure of Java program.

OR

(b) What are the features of Java?

2. *(a)* Define two different types of constructors.

OR

(b) What are four important parts of method declaration?

3. *(a)* When to use nested try block in Java program?

OR

(b) Write at least four operations that can be performed with File Object.

4. *(a)* State and define different types of Wrapper Class.

OR

(b) Write two points of advantages of implementing packages.

5. *(a)* Write the differences between Applet and Application.

OR

(b) What are the three participants in event model?

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

D. Answer the following questions : 10×5=50

1. *(a)* How does Java differ from C? 4

(b) Define an array. Write different types of arrays in Java with suitable example. 2+4=6

OR

2. *(a)* Define OOPs concepts in Java. 5

(b) Write the advantage of switch over to if ... else statement. Write a simple program to demonstrate a switch statement. 5

3. *(a)* How is static variable different from instance variable? 4

(b) Define inheritance. Write and explain different types of inheritance with a suitable diagram. 6

OR

4. *(a)* Write a suitable program to demonstrate how communication takes place between objects using method. 5

(b) Write the rules of thump in Access modifiers. 5

5. *(a)* Explain how exception handling can be regarded as debugger. 4

(b) List out five common compile-time errors. Also write a simple program that demonstrates compile-time error. 6

OR

6. *(a)* Define Byte stream. State and explain different types of Byte stream. 5

(b) Define File. List out and write the function of basic i/o related exception in Java. 5

7. *(a)* How to create our own package in Java? 5

(b) Write a suitable program to achieve multiple inheritance using interface. 5

OR

8. *(a)* Define Wrapper Class. Why do we need Wrapper Class in Java programming? 2+3=5

(b) Write various types of Java API packages with their respective content. 5

9. *(a)* Define an Applet. Explain two types of Applets in Java with a suitable diagram. 2+3=5

(b) State and explain different stages in the life cycle of Applet with suitable diagram. 5

OR

10. *(a)* Define containers. List commonly used containers in Java. How are they different from one another? 1+4=5

(b) Write different types of SWING component with an example. 5

★ ★ ★