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(February)

COMPUTER APPLICATION

(Honours)

(Object Oriented Programming Through Java)

(BCA–502)

Marks : 45

Time : 2 hours

The figures in the margin indicate full marks for the questions

Answer **one** question from each Unit

UNIT—I

1. *(a)* How has Java impacted the Internet and what is the role played by bytecode? 3+2=5

(b) With the help of appropriate examples, differentiate between widening and narrowing conversions. 4

2. *(a)* Explain how Java is robust and architecture-neutral. 4

(b) Why is Java a strongly typed language? Illustrate with examples an integer literal, a float literal, a Boolean literal and a character literal. 2+2=4

(c) What do you understand by the static modifier? 1

UNIT—II

3. Design a full-fledged class of your choice exhibiting private instance variables, overloaded constructors, passing objects as parameters, and accessor and mutator methods. [**Hint:** accessors are *get* methods and mutators are *set* methods] 9

4. *(a)* What are command line arguments? Give an example. 2

(b) What happens if a method has the final keyword as modifier? 1

(c) Illustrate with an example of the following features : 2+2+2=6

(i) How superclass constructors are invoked from subclasses

(ii) How a superclass method is overridden in a subclass

(iii) How a superclass reference variable refers a subclass object

UNIT—III

5. *(a)* What is a package? How is a package defined and stored? How does the Java runtime system locate user-defined packages? 1+2+3=6

(b) What are type wrapper classes? Briefly describe collection interface and iterator. 1+2=3

6. *(a)* Differentiate between process-based multitasking and thread-based multitasking. Illustrate how multiple threads can be created and the usage of the join() method. 2+4=6

(b) What is an exception? How does throw differ from throws? 1+2=3

UNIT—IV

7. *(a)* Briefly describe the FileInputStream and the FileOutputStream classes and the possible exceptions that might occur when their constructors are invoked. 2+2=4

(b) How do you create a server socket? What port numbers can be used? How does a client initiate connection and how does a server accept a connection? 1+1+3=5

8. *(a)* How do you check whether a file already exists? Can you find the file size (the number of bytes) using the file class? How do you create a directory? 1+1+1=3

(b) Describe the following JDBC interfaces : Driver, Connection, Statement and ResultSet 4

(c) How do you create a database connection? How do you create a statement and execute an SQL statement? 1+1=2

UNIT—V

9. *(a)* Describe the life cycle of an applet with the help of an example. How do you extract the directory holding the HTML file that started the applet and the directory from which the applet's class file was loaded? 4+2=6

(b) Why were applets initially very popular and why were they deprecated? 3

10. *(a)* Briefly describe the purpose of layout managers. Discuss any two layout managers. 1+2=3

(b) Discuss the events, event sources and even listeners involved when an applet contains a button and a message "Button Clicked" is painted on the applet whenever the button is clicked. 6

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