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BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – MCA-2024

Course Name – Object Oriented Design Using Java

Course Code - MCA27108 (T)

(Semester II)

Full Marks : 40

Time : 2:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. *Choose the correct alternative from the following :*

- (i) Choose the true fact about variables declared without any modifier inside an interface.
 - a) Variables are implicitly private and final.
 - b) Variables are implicitly public, static, and final.
 - c) Variables can be declared as protected.
 - d) Variables are dynamic and can be changed.
- (ii) Choose the correct combination of modifiers that are implicitly declared for all methods in interfaces when no specific modifier is provided.
 - a) public and static
 - b) private and abstract
 - c) public and abstract
 - d) protected and final
- (iii) Evaluate the following methods and choose the method that executes the SQL query in the PreparedStatement object and returns the ResultSet object generated by the query.
 - a) execute()
 - b) executeLargeUpdate()
 - c) executeQuery()
 - d) executeInsert()
- (iv) Determine which method of the ResultSet interface is used to retrieve data from a particular column.
 - a) getData()
 - b) fetch()
 - c) getString()
 - d) getColumn()
- (v) What is the difference between start() and init() methods in an applet?
 - a) init() is called when the applet is first loaded, and start() is called every time the applet is shown.
 - b) start() is called before init().
 - c) start() is optional, while init() is mandatory.
 - d) init() is used to stop the applet.

- (vi) What happens when you invoke repaint() method in an applet?
- repaint() requests to call update() followed by paint().
 - repaint() directly calls paint().
 - repaint() clears the screen and redraws the entire UI.
 - repaint() restarts the applet.
- (vii) State the default layout manager for an applet.
- FlowLayout
 - BorderLayout
 - GridLayout
 - CardLayout
- (viii) Indicate the method called when a mouse button is pressed within an applet.
- mousePressed()
 - mouseClicked()
 - mouseEntered()
 - mouseExited()
- (ix) Decide which methods can be used to obtain the current settings for the background and foreground colors.
- getBackground() and getForeground()
 - getBackgroundColor() and getForegroundColor()
 - setBackground() and setForeground()
 - None of these
- (x) Find the correct constructor for a thread from the following:
- Thread(Runnable a, String str)
 - Thread(int priority)
 - Thread(Runnable a, int priority)
 - Thread(Runnable a, ThreadGroup t)

Group-B

(Short Answer Type Questions)

3 x 5=15

- Write a program in Java to demonstrate the use of interfaces. (3)
- Write a Java program to create a thread by extending the Thread class and overriding the run() method to print 'Hello from Thread!' five times. (3)
- Formulate what the yield() method of the Thread class does in Java. (3)
- When would you use the Runnable interface instead of extending the Thread class in Java? (3)
- Discuss the concept of thread priority in Java. (3)

OR

Explain the differences between a Thread and a Process. (3)

Group-C

(Long Answer Type Questions)

5 x 3=15

- Distinguish between the Runnable and Callable interfaces in Java and explain their use in applets. (5)
- Explain the importance of the throw and throws keywords in exception handling. Demonstrate their use with an example. (5)
- Critically evaluate the garbage collection mechanisms in Java. How does the JVM determine which objects to collect? Discuss the different types of garbage collectors. (5)

OR

Can a constructor be private in Java? Justify your answer with an example. (5)
