Total No. of Questions: 22

Enrollment No : _____

MEDICAPS UNIVERSITY

Faculty of Science / Engineering

End Semester Examination May 2025

CA3CO14 Object Oriented Technology

Programme	:	BCA / BCA-MCA (Integrated)	**Branch/Specialisation**	:	-
Duration	:	3 hours	**Maximum Marks**	:	60

Note: *All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.*

Section 1 (Answer all question(s))

		Marks	CO	BL
Q1.	Which component is used to compile, debug and execute the java programs?	1	1	1
	○ JRE ○ JIT ◉ JDK ○ JVM			
Q2.	What is the extension of compiled java classes?	1	1	1
	◉ .class ○ .txt ○ .js ○ .java			
Q3.	What is the correct syntax for creating a one-dimensional array in Java?	1	3	1
	◉ int[] arr = new int[5]; ○ int arr[5]; ○ array arr = new int(5); ○ int arr = array[5];			
Q4.	Which of the following is NOT true about wrapper classes in Java?	1	3	4
	○ They allow primitive types to be treated as objects ○ They provide utility methods for primitives ◉ They allow direct inheritance ○ They are immutable			
Q5.	Which of the following methods is used for inter-thread communication in Java?	1	3	2
	○ notify() ○ wait() ○ notifyAll() ◉ All of the above			
Q6.	Which keyword is used to define your own exceptions in Java?	1	3	1
	○ define ◉ throw ○ exception ○ custom			
Q7.	What is the purpose of a Panel in AWT?	1	4	2
	○ To display a menu bar ◉ To serve as a generic container for components ○ To arrange components in a grid layout ○ To create scrollable text			
Q8.	Which of the following layouts allows you to arrange components in a rows and columns manner?	1	4	2
	◉ GridLayout ○ FlowLayout ○ CardLayout ○ Layout			
Q9.	What is the role of the addActionListener() method?	1	4	2
	○ To listen for keyboard events ◉ To register an ActionListener with a component. ○ To listen for mouse events ○ To unregister a listener from a component.			

Q10. Which Swing component is used to display text and images in a scrollable area with horizontal and/or vertical scrollbars? **1 4 2**

- ○ JLabel
- ○ JTextArea
- ○ JPanel
- ◉ JScrollPane

Section 2 (Answer all question(s))

Marks CO BL

Q11. What is the significance of labelled loops in Java? **2 3 3**

Rubric	Marks
Significance of labelled loops in Java?	2

Q12. How do decision-making statements work in Java, illustrate their usage with an example? **3 3 3**

Rubric	Marks
How do decision-making statements work in Java, illustrate their usage with an example? (3 marks)	3

Q13. (a) How do logical and bitwise operators differ in Java? Provide real-world examples where each type would be useful. **5 1 4**

Rubric	Marks
How do logical and bitwise operators differ in Java and Provide real-world examples where each type would be useful. (5 marks)	5

(OR)

(b) Explain the classification of data types in Java and also provide examples of primitive and non-primitive data types.

Rubric	Marks
Explain the classification of data types in Java, Provide examples of primitive and non-primitive data types.	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. What is the objective of wrapper class in java? **2 1 2**

Rubric	Marks
the objective of wrapper class in java?	2

Q15. (a) Explain the concept of constructors in Java. Discuss their significance and types, along with appropriate examples. **8 2 3**

Rubric	Marks
Explain the concept of constructors in Java ,Discuss their significance and types, along with appropriate examples.	8

(OR)

(b) Explain the concept of inheritance in Java, focusing on why multiple inheritance is not supported in Java. Discuss how Java overcomes this limitation using interfaces, and provide relevant examples to illustrate your explanation.

Rubric	Marks
Explain the concept of inheritance in Java, Why multiple inheritance is not supported, Discuss how Java overcomes this limitation using interfaces, provide relevant examples to illustrate your explanation.	8

Section 4 (Answer all question(s))

Marks CO BL

Q16. Discuss thread synchronization in Java, with its importance in multithreading and demonstrate its implementation with relevant examples. **3 3 3**

Rubric	Marks
Discuss thread synchronization in Java, with its importance in multithreading, demonstrate its implementation with relevant examples	3

Q17. (a) Explain the concept of exception handling in java with the role of try, catch, throw, throws and finally. How does the Java compiler handle checked and unchecked exceptions differently explain with suitable example of each aspects? **7 3 1**

Rubric	Marks
Explain the concept of Exception Handling in java with the role of (try, catch, throw, throws and finally), and how does the Java compiler handle checked and unchecked exceptions differently explain with suitable example of each aspects.	7

(OR)

(b) Explain the concept of Multithreading with its life cycle. How can a thread be created in Java? Provide suitable examples for each justify which method is preferred in java with reason.

Rubric	Marks
Explain the concept of Multithreading with its life cycle, How can a thread be created in Java? Provide suitable examples for each justify which method is preferred in java with reason.	7

Section 5 (Answer all question(s))

Marks CO BL

Q18. What are AWT controls? Explain the use of Button, Checkbox, and RadioButton in an AWT application. Provide examples to illustrate the usage of each control. **4 4 3**

Rubric	Marks
What are AWT controls, Explain the use of Button, Checkbox, and RadioButton in an AWT application. Provide examples to illustrate the usage of each control.	4

Q19. (a) Describe the role of layout managers in Java AWT for organizing components in a container. Compare the features of the following layout managers: FlowLayout, GridLayout, BorderLayout. Provide examples to illustrate the usage of each layout manager. **6 4 1**

Rubric	Marks
Describe the role of layout managers in Java AWT for organizing components in a container, Compare and the features of the following layout managers: FlowLayout, GridLayout, BorderLayout and Provide examples to illustrate the usage of each layout manage.	6

(OR)

(b) Elaborate on the Java AWT class hierarchy with diagram to illustrate its structure.

Rubric	Marks
Elaborate on the Java AWT class hierarchy with diagram to illustrate its structure?	6

Section 6 (Answer any 2 question(s))

Marks CO BL

Q20. Explain the concept of adapter class with its features. Provide examples to demonstrate the usage of each adapter. **5 4 3**

Rubric	Marks
the concept of adapter class with its features, Provide examples to demonstrate the usage of each adapter.	5

Q21. Explain delegation event model. **5 2 4**

Rubric	Marks
Explain Delegation Event Model.	5

Q22. Explain the role of JRadioButton, JTextField, JLabels, JComboBox, and JList component in java. Demonstrate each role with an example. **5 4 3**

Rubric	Marks
role of JRadioButton, JTextField, JLabels, JComboBox, and JList component in java, demonstrate each role with an example	5

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