

A10.1-R4 / B2.51-R4 : INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING THROUGH JAVA

अवधि : 03 घंटे

DURATION : 03 Hours

अधिकतम अंक : 100

MAXIMUM MARKS : 100

ओएमआर शीट सं. :					
OMR Sheet No. :					

रोल नं. :

Roll No. :

उत्तर-पुस्तिका सं. :

Answer Sheet No. :

परीक्षार्थी का नाम :

Name of Candidate :

परीक्षार्थी के हस्ताक्षर :

Signature of Candidate :

परीक्षार्थियों के लिए निर्देश :

Instructions for Candidate :

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यानपूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दे सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के दो भाग हैं। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।	There are TWO PARTS in this Module/Paper. PART ONE contains FOUR questions and PART TWO contains FIVE questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 हैं तथा भाग दो "व्यक्तिपरक" प्रकार का है और इसके कुल अंक 60 हैं।	PART ONE is Objective type and carries 40 Marks. PART TWO is Subjective type and carries 60 Marks.
भाग एक के उत्तर, ओएमआर उत्तर-पुस्तिका पर ही दिये जाने हैं। भाग दो की उत्तर-पुस्तिका में भाग एक के उत्तर नहीं दिये जाने चाहिए।	PART ONE is to be answered in the OMR ANSWER SHEET only. PART ONE is NOT to be answered in the answer book for PART TWO.
भाग एक के लिए अधिकतम समय सीमा एक घण्टा निर्धारित की गई है। भाग दो की उत्तर-पुस्तिका, भाग एक की उत्तर-पुस्तिका जमा कराने के पश्चात् दी जाएगी। तथापि, निर्धारित एक घंटे से पहले भाग एक पूरा करने वाले परीक्षार्थी भाग एक की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, भाग दो की उत्तर-पुस्तिका ले सकते हैं।	Maximum time allotted for PART ONE is ONE HOUR. Answer book for PART TWO will be supplied at the table when the Answer Sheet for PART ONE is returned. However, Candidates who complete PART ONE earlier than one hour, can collect the answer book for PART TWO immediately after handing over the Answer Sheet for PART ONE to the Invigilator.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा नहीं छोड़ सकते हैं। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his/her Answer Sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer the questions, the candidate should ensure that the Question Booklet is complete in all respect.

जब तक आपसे कहा न जाए, तब तक प्रश्न-पुस्तिका न खोलें।

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

PART ONE

(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet attached to the question paper, following instructions therein.

(1x10)

- 1.1 Which is a technique in Java in which a class can have any number of constructors that differ in parameter lists ?

(A) Constructor overloading
(B) Method overloading
(C) Operator overloading
(D) None of the above

- 1.2 Which keyword is used for the block to handle the exceptions generated by try block ?

(A) Catch
(B) Final
(C) Throw
(D) Try

- 1.3 Under which package is the string class encapsulated ?

(A) java.util
(B) java.lang
(C) java.io
(D) java.awt

- 1.4 JVM stands for :

(A) Java Very Large Machine
(B) Java Verified Machine
(C) Java Virtual Machine
(D) Java Very Small Machine

- 1.5 Which keyword is used by classes to implement an interface ?

(A) import
(B) implements
(C) instance of
(D) none of the above

- 1.6 If a class inheriting an abstract class does not define all of its method then it will be known as :

(A) Final
(B) Simple
(C) Abstract
(D) Static

- 1.7 In a UML diagram, generalization is indicated by :

(A) Arrow from subclass to super class
(B) Arrow from super class to subclass
(C) Line with a diamond at super class
(D) Line with a diamond at subclass

1.8 public interface A <pre>{ int z=10;//line1 }</pre> Which piece of codes is equivalent to line 1 ? (A) public int i = 10; (B) static int i = 10 (C) public static int i = 10; (D) public static final int i = 10	2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" sheet attached to the question paper, following instructions therein. (1x10) 2.1 Unchecked exceptions are checked at compile-time rather they are checked at runtime. 2.2 The PipedInputStream and PipedOutputStream classes can be used to read and write data simultaneously.
1.9 Protected member of a class in JAVA : (A) Can be inherited by derived class but cannot be accessed directly through an object (B) Cannot be inherited by derived class and can be accessed directly through an object (C) Can be inherited by derived class and can be accessed directly through an object (D) Cannot be inherited by derived class and cannot be accessed directly through an object	2.3 ResultSetMetaData interface is useful because it provides methods to get metadata from the ResultSet object. 2.4 Switch is more efficient than nested if or if - else in java. 2.5 A package can be renamed without renaming the directory in which the classes are stored. 2.6 Breaking a string or stream into meaningful independent words is known as tokenization.
1.10 Encapsulation in object-oriented modelling is useful as : (A) it allows improving methods of an object independent of other parts of a system (B) it hides implementation details of methods (C) it allows easy designing (D) encapsulates attributes and operations of object	2.7 An interface is a blueprint of a class. It has static constants and abstract methods. 2.8 The Object class is not a parent class of all the classes in java by default. 2.9 If you import a package, sub-packages will not be imported. 2.10 Multiple inheritances is not supported in case of class but it is supported in case of interface.

3. Match words and phrases in column X with the closest related meaning/word(s)/ phrase(s) in column Y. Enter your selection in the “OMR” answer sheet attached to the question paper, following instructions therein. (1x10)

X		Y	
3.1	Static variables have	A.	java.util package
3.2	A block which get executed only once and even before main method	B.	Throwable
3.3	next() method	C.	Overload
3.4	Calendar class	D.	Class scope
3.5	Super class of Exception and Error class	E.	Static block
3.6	A final method cannot be	F.	Inheritance
3.7	Casting a reference stored in a superclass variable to a subclass type is called	G.	Instance block
3.8	Code reusability is achieved through	H.	Override
3.9	Base class constructor can be invoked using	I.	java.util.Enumeration
3.10	Prepared Statement	J.	Down casting
		K.	File
		L.	Super
		M.	A precompiled SQL statement

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the "OMR" answer sheet attached to the question paper, following instructions therein. (1x10)

A.	public and abstract	B.	Package	C.	Use Case
D.	java.awt	E.	.class	F.	Border Layout
G.	throw	H.	Polymorphism	I.	import
J.	private and final	K.	object	L.	Interrupted
M.	Sequence				

- 4.1 In Java, the AWT classes are contained in the _____ package.
- 4.2 It is possible to throw an exception explicitly using the _____ statement.
- 4.3 Java byte code output from the JDK compiler will be placed into a file with _____ extension.
- 4.4 A _____ is a collection of classes and interfaces.
- 4.5 Methods defined in an interface are by default _____.
- 4.6 The ability to take more than one forms is called _____.
- 4.7 In Java, Array is implemented as _____.
- 4.8 _____ diagram shows interaction by showing each participants with ordering of messages.
- 4.9 The default layout manager of frame is _____.
- 4.10 Thread.sleep() method throws _____ Exception.

PART TWO

(Answer any FOUR questions)

5. (a) Explain the steps to connect with database using JDBC.
(b) Explain method overriding with example program.
(c) Explain the following terms with respect to exception handling :
(i) Try/Catch
(ii) Throw
(iii) Finally
(iv) Throws (5+5+5)
6. (a) Develop a message abstract class which contains playMessage abstract method. Write a different sub-classes like TextMessage, VoiceMessage and FaxMessage classes for to implementing the playMessage method.
(b) Explain event handling with examples.
(c) Explain thread synchronization with examples. (5+5+5)
7. (a) Describe any five methods from graphics class.
(b) List out the decision making statements available in Java. Explain any one with example.
(c) What is a constructor ? What are its special properties ? (5+5+5)

8. (a) What is a Layout Manager and what are the different Layout Managers available in java.awt package ?
(b) What are Wrapper classes ? Explain Autoboxing and Unboxing in brief.
(c) Explain default, private, protected and public access modifiers of Java in brief. (5+5+5)
9. (a) Explain methods of Mouse Listener interface.
(b) Explain the purpose of following diagrams in UML.
(i) Class Diagram
(ii) Use Case Diagram
(c) Java supports multiple inheritance with interfaces but not class. Justify the statement. (5+5+5)

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SPACE FOR ROUGH WORK

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