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 ध्यान पूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंगेजी है। परीक्षार्थी केवल अंगेजी 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 है। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न है।	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 है तथा भाग दो, "व्यक्तिपरक" प्रकार है और इसके कुल अंक 60 है।	PART ONE is Objective type and carries 40 Marks. PART TWO is subjective type and carries 60 Marks.
भाग एक के उत्तर, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार ही दिये जाने है। 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, supplied with the question paper, as per the instructions contained therein. 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 पश्चात 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**.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना एवं अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकता हैं। ऐसा नही 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 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 पश्चात एवं उत्तर देने से पहले उम्मीदवार यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before answering 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 supplied with the question paper, following instructions therein.** **(1x10)**

1.1 Which of the following is used to interpret and execute Java Applet Classes hosted by HTML?
A) appletshow   B) appletscreen
C) appletviewer   D) appletwatcher

1.2 Jar stands for _____.
A) Java Application Runner
B) Java Archive Runner
C) Java Archive
D) None of these

1.3 Which of the following is not a keyword in Java?
A) Instanceof   B) transient
C) emun   D) strictfp

1.4 Platform independent code file created from Source file is understandable by _____.
A) Compiler   B) Applet
C) JRE   D) JVM

1.5 What is the output of this program?
```
class Output {
  public static void main(String args[]) {
    double i = new Double(257.5);
    boolean x = i.isNaN();
    System.out.print(x);
  }
}
```
A) true   B) false
C) 0   D) 1

1.6 Which of the following statements are incorrect?
A) public members of class can be accessed by any code in the program.
B) private members of class can only be accessed by other members of the class.
C) private members of class can be inherited by a sub class, and become protected members in sub class.
D) protected members of a class can be inherited by a sub class, and become private members of the sub class.

1.7 What is the output of this program?
```
package pkg;
class output {
public static void main(String args[])
{
  StringBuffer s1 = new StringBuffer("Hello");
  s1.setCharAt(1, x);
  System.out.println(s1);
}
}
```
A) xello   B) xxxxx
C) Hxllo   D) Hexlo

1.8 Which of these is supported by method overriding in Java?
A) Abstraction   B) Encapsulation
C) Polymorphism   D) None of the mentioned

1.9 Which of these keywords must be used to handle the exception thrown by try block in some rational manner?
A) try   B) finally
C) throw   D) catch

1.10 Which of these methods is a part of Abstract Window Toolkit (AWT)?
A) display()   B) print()
C) drawString()   D) transient()

2. **Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.** **(1x10)**

2.1 A method in a class declared as static any be invoked simply by using the name of the method alone.
2.2 The access level of an overridden method cannot be changed in a subclass.
2.3 In an instance method or a constructor, "this" is a reference to the current object.
2.4 The JRE deletes objects when it determines that they are no longer being used. This process is called Garbage Collection.
2.5 It is an error to have a method with the same signature in both the super class and its subclass.
2.6 When the String objects are compared with = =, the result is true if the strings contain the same values.
2.7 The CheckboxGroup class is a subclass of the Component class.
2.8 A variable declared inside the for loop control cannot be referenced outside the loop.
2.9 If a = 10 and b = 15, then the statement x = (a > b)? a : b; assigns the value 15 to x.
2.10 Throwing an Exception always causes program termination.

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 supplied with the question paper, following instructions therein.** (1x10)

	X		Y
3.1	Javah	A.	runs Java byte code
3.2	print	B.	are inner class
3.3	correct way of inheriting class A by class B	C.	Class is related to all the exceptions that are explicitly thrown
3.4	implements	D.	is a tool for creating C-like header files
3.5	drawString()	E.	class B extends A {}
3.6	nested classes	F.	Keyword is used to manually throw an exception
3.7	jdb	G.	used to output a string in an applet
3.8	Throwable	H.	used to display the output of an applet
3.9	try	I.	keywords are used by a class to use an interface defined previously.
3.10	throw	J.	is a tool for debugging Java program
		K.	class B extends class A {}
		L.	keywords must be used to monitor for exceptions
		M.	Handles the exception when no catch is used?

4. **Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option, enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.** (1x10)

A.	Serialization	B.	Stack	C.	HashSets
D.	Javax.sql.*	E.	FilterOutputStream	F.	Java web server
G.	InputSream	H.	java.lang	I.	Java.awt.AWTEvent
J.	java.lang.Object	K.	java.awt.event.AWTEvent	L.	HashMaps
M.	Java.mysql.*				

4.1 The class string belongs to _____ package.

4.2 _____ is the root class of all AWT events.

4.3 All Java classes are derived from _____.

4.4 In JDBC _____ imports all Java classes concerned with database connectivity.

4.5 In order to run JSP _____ is required.

4.6 _____ are maps that link a key to a value.

4.7 _____ are list of elements that have a first in last out ordering.

4.8 BufferedOutputStream is a direct subclass of _____.

4.9 The system.in is _____ type of stream.

4.10 Encoding an object into a stream is _____.

ROUGH WORK SPACE:

PART TWO
(Answer any FOUR questions)

5.
a) Explain method overriding with suitable example.
b) Briefly discuss importance of the following diagrams in UML:
   i) Component Diagram & Deployment Diagram
   ii) Activity Diagram

(6+9)

6.
a) Explain the applet Life cycle.
b) Explain what is Model-View-Controller? Mention what are the advantages of MVC?

(6+9)

7.
a) What is a Constructor, Constructor Overloading in Java and Copy-Constructor?
b) What is the difference between an Interface and an Abstract class?
c) What are the two types of Exceptions in Java? Which are the differences between them?

(5+5+5)

8.
a) What do you understand by thread-safety? Why is it required? And finally, how to achieve thread-safety in Java Applications?
b) What is dynamic class loading?
c) What are the advantages of Java package?

(5+5+5)

9.
a) What do you mean by Access Modifier and synchronized Non-Access Modifier?
b) What is JDBC? What are the main steps in Java to make JDBC connectivity?

(7+8)

*****

ROUGH WORK SPACE:

ROUGH WORK SPACE: