**IIG Varsity**

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Test: **IIG-FND-005**, Time: **2 hours**, Date: **02-09-2022 SIKUNSOUMYARANJAN OJHA**

**Section-1** (Answer any one questions) Mark: 50

Upload the program to your GitHub repository in your respective folder at

https://github.com/milandas63/IIG-batch1

1. Write a set of exception classes to detect the fault in railway tracks in the following hierarchy:

**+-Object**

**| +-Throwable**

**| | +-RailwayTrackException**

**| | | +-TrackSpeedException**

**| | | | +- SpeedAboveMaxLimitException**

**| | | | +- SpeedBelowMinLimitException**

**| | | +-BrokenTrackException**

**| | | +-TrackDerailException**

**| | | +-TrackTamperingException**

* The permissible max speed on the railway track is 100
* The permissible min speed on the railway track is 30
* Broken is true if any part of the track is broken and permissible min speed in zero
* Derail is true if the train is derailed and permissible min speed in zero
* Tamper is true if the track has tampered and permissible min speed in zero
* Write another program to test the API with the following test cases:

**Object loco[][] = { {speed, broken, detail, tamper},**

**{90, false, false, false},**

**{55, false, true, false},**

**{65, true, false, false},**

**{70, false, false, true},**

**{25, false, false, false}**

**};**

1. Question

* Write a program to create an interface in the name Judiciary with the following methods:
  + **public String getCourtName()**
  + **public boolean getJudgementFavour(int party)**
  + **public int getNumberOfCaseSittings()**
  + **public int getNumberOfWitnesses()**
* Create 3 more classes **District-court**, **Subjudge-court** and **High-court** that implement the Judiciary interface
* Create another program to call the API with the following test cases:

**Object testcases[][] =**

**{ {court-name, judgement-favour, no-of-sittings, no-of-witnesses},**

**{“Subjudge-court”, 2, 11, 3},**

**{“High-court”, 1, 8, 6}**

**};**

**Section-2** (Answer all questions) Mark: 50

Colour the right answer in blue colour

1. Which of the follwing below live on the heap in java?
2. Class
3. Instance variable
4. Method
5. Object
6. Which of the following interface is used to declare core methods in java?
7. Set
8. EventListner
9. Collection
10. Comparator
11. Which of these interface handle sequences?
12. Set
13. List
14. Comparator
15. Collection
16. Which of this interface must contain a unique element?
17. Set
18. List
19. Array
20. Collection
21. Which of the following declarations does not compile?
22. double num1, int num2 = 0;
23. int num1, num2;
24. int num1, num2 = 0;
25. int num1 = 0, num2 = 0;
26. What is the output of following program?

public class Test {

public static void main(String[] args) {

for(int i = 0; i < 5; i++) {

System.out.print(i + ' ');

System.out.print(" ");

}

System.out.println();

}

}

1. 0 1 2 3 4
2. 1 2 3 4 5
3. 32 33 34 35 36
4. 33 34 35 36 37
5. What is the output of following program?

import java.util.ArrayList;

public class Test {

public static void main(String[] args) {

ArrayList arrList = new ArrayList();

arrList.add(1);

arrList.add('1');

arrList.add("1");

System.out.println(arrList);

}

}

1. [1, 49, 1]
2. [1, 1, 1]
3. [1, 2, 3]
4. Compile error
5. What is the output of following program?

public class Test {

public static void main(String[] args) {

for(int i=0; 0; i++) {

System.out.println("Hello World!");

}

}

}

1. Hello World!
2. 0
3. Compile error
4. None of the above
5. Which statement about a valid .java file is true?
6. It can only contain one class declaration
7. It can contain one pulic class declaration and one public interface definition
8. It must define at least one public class
9. It may define at most one public class
10. What is the output of following program?

public class Test {

private static int one = 10;

int two = 20;

public static void main(String []args) {

Test test = new Test();

int today = 20;

two = 40;

System.out.println(today + test.two + test.one);

}

}

1. 40
2. 50
3. 70
4. Compile error
5. What is the output of following program?

public class Test{

static int start = 2;

final int end;

public Test(int x) {

x = 4;

end = x;

}

public void fly(int distance) {

System.out.println(end-start+" ");

System.out.println(distance);

}

public static void main(String []args){

new Test(10).fly(5);

}

}

1. [2 5]
2. [4 5]
3. [3 5]
4. [5 5]
5. What is the output of following program?

public class Test {

public static void main(String a[]) {

try {

int val = 10/0;

} catch(Exception e) {

System.out.println(e);

} catch(ArithmeticException ae) {

System.out.println(ae);

}

}

}

1. java.lang.ArithmeticException: / by zero
2. Compile error
3. ArithmeticException()
4. Non of the above
5. What is the output of following program?

public class Test {

static void charNum(String inputString) {

HashMap<Character, Integer> charMap =

new HashMap<Character, Integer>();

char[] strArray = inputString.toCharArray();

for(char c: strArray) {

if(charMap.containsKey(c)) {

charMap.put(c, charMap.get(c)+1);

} else {

charMap.put(c, 1);

}

}

Set<Character> charInString = charMap.keySet();

for(Character ch: charInString) {

if(charMap.get(ch) > 1) {

System.out.println(ch + " : " + charMap.get(ch));

}

}

}

public static void main(String[] args) {

charNum("JavaJ2Ee");

}

}

1. a : 2

J : 2

1. a : 3

J : 3

1. a : 2

J : 3

1. a : 3

J : 2

1. Which of the following declarations does not compile?
2. double num1, int num2 = 0;
3. int num1, num2;
4. int num1, num2 = 0;
5. int num1 = 0, num2 = 0;
6. What is the output of the following?

public static void main(String... args) {

String chair, table = "metal";

chair = chair + table;

System.out.println(chair);

}

1. metal
2. metalmetal
3. nullmetal
4. The code does not compile
5. Which is correct about an instance variable of type String?
6. It defaults to an empty string
7. It defaults to null
8. It does not have a default value
9. It will not compile without initializing on the declaration line
10. How many of the following methods compile?

public class Test {

public String convert(int value) {

return value.toString();

}

public String convert(Integer value) {

return value.toString();

}

public String convert(Object value) {

return value.toString();

}

public static void main(String... args) {

Test obj = new Test();

System.out.println(obj.convert(10));

}

}

1. None
2. One
3. Two
4. Three
5. Which of the following does not compile?
6. int num = 999;
7. int num = 9\_9\_9;
8. int num = \_9\_99;
9. None of the above; they all compile
10. Which is the first line to trigger a compiler error?

double d1 = 5f; // p1

double d2 = 5.0; // p2

float f1 = 5f; // p3

float f2 = 5.0; // p4

1. p1
2. p2
3. p3
4. p4
5. What is the output of the following?

Integer integer = new Integer(4);

System.out.print(integer.byteValue());

System.out.print("-");

int i = new Integer(4);

System.out.print(i.byteValue());

1. 4-0
2. 4-4
3. The code does not compile
4. The code compiles but throws an exception at runtime
5. How many instance initializers are in this code?

public class Bowling {

{

System.out.println();

}

public Bowling() {

System.out.println();

}

static {

System.out.println();

}

{

System.out.println();

}

}

1. None
2. One
3. Two
4. Three
5. Which of these is used to perform all input & output operations in Java?
6. Streams
7. Variables
8. Classes
9. Methods
10. System class is defined in ......
11. java.util package
12. java.lang package
13. java.io package
14. java.awt package
15. Will this code create a new file in the name a.txt

try {

File file = new File("a.txt");

} catch(Exception e) {

} catch(IOException io) {

}

1. true
2. false
3. Compilation Error
4. None of these
5. Which of these classes defined in java.io and used for file-handling are abstract
6. InputStream
7. PrintStream
8. Reader
9. FileInputStream
10. FileWriter
11. Only i
12. Only iii
13. i and iii
14. ii and iv
15. When comparing java.io.BufferedWriter and java.io.FileWriter, which capability exists as a method in only one of the two?
16. Closing the stream
17. Flushing the stream
18. Writing to the stream
19. Writing a line separator to the stream
20. Which of these is a type of stream in Java?
21. Integer stream
22. Short stream
23. Byte stream
24. Long stream
25. Which of these classes are used by Byte streams for input and output operation?
26. InputStream
27. InputOutputStream
28. Reader
29. All of the mentioned
30. Which of these classes are used by character streams for input and output operations?
31. InputStream
32. Writer
33. ReadStream
34. InputOutputStream
35. Which of this class is used to read from byte array?
36. InputStream
37. BufferedInputStream
38. ArrayInputStream
39. ByteArrayInputStream
40. Which exception is thrown by read() method?
41. IOException
42. InterruptedException
43. SystemException
44. SystemInputException
45. Which of these is used to read a string from the input stream?
46. get()
47. getLine()
48. read()
49. readLine()
50. Which of these class is used to read characters and strings in Java from console?
51. BufferedReader
52. StringReader
53. BufferedStreamReader
54. InputStreamReader
55. Which of these classes are used by Byte streams for input and output operation?
56. InputStream
57. InputOutputStream
58. Reader
59. All of the mentioned
60. Which of these classes are used by Byte streams for input and output operation?
61. InputStream
62. BufferedInputStream
63. FileInputStream
64. BufferedFileInputStream
65. Which of these class contains the methods print() & println()?
66. System
67. System.out
68. BUfferedOutputStream
69. PrintStream

1. Which of these methods can be used to writing console output?
2. print()
3. println()
4. write()
5. All of the mentioned
6. Which of these classes are used by character streams output operations?
7. InputStream
8. Writer
9. ReadStream
10. InputOutputStream
11. Which of the following statement is correct?
12. reverse() method reverses all characters
13. reverseall() method reverses all characters
14. replace() method replaces first occurrence of a character in invoking string with another character
15. replace() method replaces last occurrence of a character in invoking string with another character
16. What will be the output of the following Java program if input given is ‘abcqfghqbcd’?

class IO\_Operation {

public static void main(String args[]) throws IOException {

char c;

BufferedReader obj =

new BufferedReader(new InputStreamReader(System.in));

do {

c = (char) obj.read();

System.out.print(c);

} while(c != 'q');

}

}

1. abcqfgh
2. abc
3. abcq
4. abcqfghq
5. What will be the output of the following Java program if input given is “abc’def/’egh”?

public class Input\_Output {

public static void main(String args[]) throws IOException {

char c;

BufferedReader obj =

new BufferedReader(new InputStreamReader(System.in));

do {

c = (char) obj.read();

System.out.print(c);

} while(c!='\'');

}

}

1. abc’
2. abcdef/’
3. abc’def/’egh
4. abcqfghq
5. In java, how many streams are created for us automatically/implicitly?
6. 2
7. 3
8. 4
9. 5
10. Which method is used to write a byte to the current output stream?
11. public void write(int) throws IOException
12. public void write(byte[]) throws IOException
13. public void flush() throws IOException
14. public void close() throws IOException
15. Which method is used to write an array of byte to the current output stream?
16. public void write(int) throws IOException
17. public void write(byte[]) throws IOException
18. public void flush() throws IOException
19. public void close() throws IOException
20. Which of these class is not a member class of java.io package?
21. File
22. StringReader
23. Writer
24. String
25. ObjectFilter class is a member of java.io package
26. TRUE
27. FALSE
28. Can be true or false
29. Can not say
30. \_\_\_\_\_\_\_\_\_\_\_ returns true if called on a file and returns false when called on a directory
31. IsFile()
32. Isfile()
33. isFile()
34. isfile()
35. What will be output for the following code?

import java.io.\*;

class files {

public static void main(String args[]) {

File obj = new File("/java/system");

System.out.print(obj.getName());

}

}

1. java
2. system
3. java/system
4. /java/system
5. What will be output for the following code? Note: file is made in c drive

import java.io.\*;

public class Files {

public static void main(String args[]) {

File obj = new File("/java/system");

System.out.print(obj.canWrite());

System.out.print(" " + obj.canRead());

}

}

1. true false
2. false true
3. true true
4. false false
5. Which of this class is not related to input and output stream in terms of functioning?
6. File
7. Writer
8. InputStream
9. Reader
10. The method …………………., force writes whenever the data accumulates in the output stream.
11. write()
12. flush()
13. read()
14. reset()