

- Q.3 i. What are the differences between String and StringBuffer? **2**
 ii. Write a program for stack simulation using class and constructors. **8**
 OR iii. Write a program to perform different operations on Strings using methods of String class. (at least 8 methods) **8**
- Q.4 i. Write a program to create a thread using Runnable interface. **2**
 ii. Explain the following methods of Thread class **3**
 getName(), setPriority(), getPriority() with example
 iii. Write short note on try, catch, throw, throws and finally with example. **5**
 OR iv. Describe java thread life cycle with diagram. **5**
- Q.5 i. Describe Abstract Window Toolkit (AWT) controls. **4**
 ii. What is a Layout Manager? Briefly describe the different Layout Managers available in java.awt package. Explain BorderLayout with help of example **6**
 OR iii. Write a program to create below interface using awt control. **6**

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- Q.6 i. Write the differences between Abstract Window Toolkit (AWT) and Swing. **2**
 ii. How to use setBounds() method? Give an example **3**
 iii. Write a program to create calculator for addition, subtraction, multiplication and division using swing control. **5**
 OR iv. Write a java program to create a menu in JFrame **5**
 File(open, save, Exit)
 Help(About us, Help)



Enrollment No.....

Faculty of Science
End Sem (Even) Examination May-2018
CA3CO14 Object Oriented Technology
 Programme: BCA Branch/Specialisation: Computer Application

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Determine output: **1**
- ```

class A {
 public static void main(String args[]) {
 int x;
 x = 10;
 if(x == 10){
 int y = 20;
 System.out.print(x + " " + y);
 y = x*2;
 }
 int y = 100;
 System.out.print(x + " " + y);
 }
}

```
- (a) 10 20 10 100 (b) 10 20 10 20  
 (c) 10 20 10 10 (d) Error
- ii. What is the output of the following program? **1**
- ```

class A {
    public static void main(String args[] ) {
        byte b;
        int i = 258;
        double d = 325.59;
        b = (byte) i;
        System.out.print(b);
        i = (int) d;
        System.out.print(i);
        b = (byte) d;
        System.out.print(b);
    }
}
    
```
- (a) 258325325 (b) 258326326 (c) 232569 (d) Error

[2]

- iii. What will be the output? **1**
- ```
public class Test {
 public static void main(String[] args) {
 int[] x = new int[3];
 System.out.println("x[0] is " + x[0]);
 }
}
```
- (a) The program has a compile error because the size of the array wasn't specified when declaring the array.  
(b) The program has a runtime error because the array elements are not initialized.  
(c) The program runs fine and displays x[0] is 0.  
(d) The program has a runtime error because the array element x[0] is not defined.
- iv. **1**
- ```
public class Test {
    public static void main(String args[]) {
        System.out.print("===");
        System.out.print(" ");
        System.out.print("A=="A");
        System.out.print(" ");
        System.out.print("a==A");
    }
}
```
- (a) "==" A=="A a==A (b) true true false
(c) true true a==A (d) Compilation Fails
- v. What is the output of the following program code? **1**
- ```
public class Test{
 public static void main(String args[]){
 try{
 int i;
 return;
 }
 catch(Exception e){
 System.out.print("inCatchBlock");
 }
 finally{
 System.out.println("inFinallyBlock");
 }
 }
}
```
- (a) inCatchBlock  
(b) inCatchBlock inFinallyBlock  
(c) inFinallyBlock  
(d) The program will return without printing anything

[3]

- vi. Determine output of the following program code? **1**
- ```
public class Test {
    public static void main(String args[]) {
        int i;
        try{
            i = calculate();
            System.out.println(i);
        }catch(Exception e){
            System.out.println("Error occurred");
        }
    }
    static int calculate(){
        return (7/2);
    }
}
```
- (a) 3 (b) 3.5 (c) Error occurred (d) Compilation Error
- vii. Which is the container that doesn't contain title bar and MenuBars but it can have other components like button, textfield etc? **1**
- (a) Window (b) Frame (c) Panel (d) Container
- viii. Which class provides many methods for graphics programming? **1**
- (a) java.awt (b) java.Graphics
(c) java.awt.Graphics (d) None of these
- ix. Which method is used to set the graphics current color to the specified color in the graphics class? **1**
- (a) public abstract void setFont(Font font)
(b) public abstract void setColor(Color c)
(c) public abstract void drawString(String str, int x, int y)
(d) None of these
- x. The Following steps are required to perform **1**
- (I) Implement the Listener interface and overrides its methods
(II) Register the component with the Listener
(a) Exception Handling (b) String Handling
(c) Event Handling (d) None of these
- Q.2 i. Write the differences between Java platform and other platforms? **2**
ii. Briefly describe JVM, JRE and JDK? **3**
iii. Write a program to print all the Armstrong number from 1 to 100. **5**
OR iv. Write a program to print all the Perfect number from 1 to 100. **5**

CA3CO14 Object Oriented Technology
Marking Scheme

Q.1 i. Determine output: **1**

```
class A{
    public static void main(String args[]){
        int x;
        x = 10;
        if(x == 10){
            int y = 20;
            System.out.print("x and y: " + x + " " + y);
            y = x*2;
        }
        int y = 100;
        System.out.print("x and y: " + x + " " + y);
    }
}
```

(a) 10 20 10 100

ii. What is the output of the following program? **1**

```
class A{
    public static void main(String args[]){
        byte b;
        int i = 258;
        double d = 325.59;
        b = (byte) i;
        System.out.print(b);
        i = (int) d;
        System.out.print(i);
        b = (byte) d;
        System.out.print(b);
    }
}
```

(c) 232569

iii. What will be the output? **1**

```
public class Test{
```

```
    public static void main(String[] args){
        int[] x = new int[3];
        System.out.println("x[0] is " + x[0]);
    }
}
```

iv. (c) The program runs fine and displays x[0] is 0. **1**

```
public class Test{
    public static void main(String args[]){
        System.out.print("==");
        System.out.print(" ");
        System.out.print("A"=="A");
        System.out.print(" ");
        System.out.print("a==A");
    }
}
```

v. (c) true true a==A **1**

What is the output of the following program code?

```
public class Test{
    public static void main(String args[]){
        try{
            int i;
            return;
        }
        catch(Exception e){
            System.out.print("inCatchBlock");
        }
        finally{
            System.out.println("inFinallyBlock");
        }
    }
}
```

vi. (c) inFinallyBlock **1**

Determine output of the following program code?

```
public class Test{
    public static void main(String args[]){
        int i;
```

```

try{
    i = calculate();
    System.out.println(i);
}catch(Exception e){
    System.out.println("Error occured");
}
}
static int calculate(){
    return (7/2);
}
}

```

	(a) 3		
vii.	Which is the container that doesn't contain title bar and MenuBars but it can have other components like button, textfield etc? (c) Panel		1
viii.	Which class provides many methods for graphics programming? (c) java.awt.Graphics		1
ix.	Which method is used to set the graphics current color to the specified color in the graphics class? (b) public abstract void setColor (Color c)		1
x.	The Following steps are required to perform (I) Implement the Listener interface and overrides its methods (II) Register the component with the Listener (c) Event Handling		1
Q.2	i. At least 4 difference	(0.5 mark * 4)	2
	ii. Definition JVM	1 mark	3
	Definition JRE	1 mark	
	Definition JDK	1 mark	
	iii. Proper input	1 mark	5
	Logic	3 marks	
	Output	1 mark	
OR	iv. Proper input	1 mark	5
	Logic	3 marks	
	Output	1 marks	

Q.3	i. Definition of String	1 mark	2
	Definition of StringBuffer	1 mark	
	ii. Proper input	2 mark	8
	Logic	4 marks	
	Output	2 marks	
OR	iii. Proper input	2 marks	8
	Logic	4 marks	
	Output	2 marks	
Q.4	i. Proper input	1 mark	2
	Logic	1 mark	
	ii. 1 mark for each method	(1 mark * 3)	3
	iii. 0.5 mark for each keyword description(0.5 mark *5) Example	2.5 marks	5
	OR	2.5 marks	5
	iv. Description of thread model State diagram	2.5 marks	
Q.5	i. 1 marks for each control	(1 mark * 4)	4
	ii. Layout manager description Example	3 marks	6
	(1 mark for input +1 mark for logic +1 mark for output)	3 marks	
OR	iii. Proper input	2 marks	6
	Logic	3 marks	
	Output	1 mark	
Q.6	i. 4 difference (0.5 for each)	(0.5 mark * 4)	2
	ii. Description setBound Example	1 mark	3
	2 marks		
	iii. Proper input	1 mark	5
	Logic	3 marks	
	Output	1 marks	
	iv. Proper input	1 mark	5
	Logic	3 marks	
	Output	1 marks	
