



UNIVERSITI TEKNOLOGI MARA

COURSE : ENTERPRISE PROGRAMMING
COURSE CODE : CSC584
DATE : [REDACTED]
SEMESTER : [REDACTED]

Instruction:

1. This paper consists of 2 Parts – **PART A (15 Objective Questions)**
PART B (2 Structured Questions)
PART C (1 Structured Question)
2. Answer ALL questions.

Name

Student ID

Group

Part A		30	
Part B	Q1	4	
	Q2	6	
Part C		10	
Total		50	

PART A: MULTIPLE CHOICES (30 MARKS)

1. Given:

```
public class Calculator {  
    int num = 100;  
    public void calc(int num) {  
        this.num = num * 10;  
    }  
  
    public void printNum(){  
        System.out.println(num);  
    }  
    public static void main(String[] args) {  
        Calculator obj = new Calculator ();  
        obj.calc(2);  
        obj.printNum();  
    }  
}
```

What is the result?

- a. 20
- b. 100
- c. 1000
- d. 2

2. Given the following class

```
public abstract class Customer {  
    private String name;  
    public Customer (String name) {  
        this.name = name;  
    }  
    public String getName() { return name; }  
    public abstract void buy();  
}
```

Which statement are **TRUE** about Customer class?

- a. The Customer class cannot be extended.
- b. The Customer class cannot be instantiated.
- c. Subclasses of Customer cannot override `getName()` method.
- d. Concrete subclasses of Customer must use a default constructor

3. What will be the output of the following Java code?

```
class A {
    public int i;
    private int j;
}
class B extends A {
    void display() {
        super.j = super.i + 1;
        System.out.println(super.i + " " + super.j);
    }
}
class inheritance {
    public static void main(String args[]) {
        B obj = new B();
        obj.i=1;
        obj.j=2;
        obj.display();
    }
}
```

- a. 2 2
- b. 3 3
- c. Runtime Error
- d. Compilation Error

4. What is Java EE component?

- a. Special icons for creating the user interface elements for thin clients.
- b. A data module saved to the component area of the database
- c. A self-contained functional software unit that is assembled into a Java EE application and interfaces with other application components
- d. A JAR file

5. "request" is instance of which one of the following classes?

- a. Request
- b. HttpRequest
- c. HttpServletRequest
- d. ServletRequest

6. Which of the following code is used to get an attribute in a HTTP Session object in servlets?

- a. session.getAttribute(String name)
- b. session.alterAttribute(String name)
- c. session.updateAttribute(String name)
- d. session.setAttribute(String name)

7. The following is the sequence of the life cycle of the servlets

1. init() 2. destroy() 3.service()

- a. 1,2,3
- b. 3,2,1
- c. 2,1,3
- d. 1,3,2

8. All the _____ data is kept at the application server _____ data is kept at the web server?
- HTML, Servlet.
 - static, dynamic
 - dynamic, static.
 - Servlet, HTML.
9. Which is not a directive?
- include
 - page
 - export
 - useBean
10. Servlet are used to program which component in a web application?
- client
 - tomcat
 - server
 - applet
11. Which are the session tracking techniques?
- URL rewriting
 - Using session object
 - Using response object
 - Using hidden fields
 - Using cookies
 - Using servlet object
- i, ii, iii, vi
 - i, ii, iv, v
 - i, vi, iii, v
 - i, ii, iii, v
12. Which of the following is true?
- A bean cannot have any constructors with parameters
 - A bean must be a private class
 - A bean must have a public argument constructor
 - All of the above.
13. Which one is the correct order of phases in JSP life cycle?
- Initialization, Cleanup, Compilation, Execution
 - Initialization, Compilation, Cleanup, Execution
 - Compilation, Initialization, Execution, Cleanup
 - Cleanup, Compilation, Initialization, Execution
14. Java code is embedded under which tag in JSP?
- Declaration
 - Scriptlet
 - Expression
 - Comment
15. Which one of the following is correct for directive in JSP?
- <%@directive%>
 - <%!directive%>
 - <%directive%>
 - <%=directive%>

ANSWER FOR PART A (30 MARKS)

1.	=A=	=B=	=C=	=D=	9.	=A=	=B=	=C=	=D=
2.	=A=	=B=	=C=	=D=	10.	=A=	=B=	=C=	=D=
3.	=A=	=B=	=C=	=D=	11.	=A=	=B=	=C=	=D=
4.	=A=	=B=	=C=	=D=	12.	=A=	=B=	=C=	=D=
5.	=A=	=B=	=C=	=D=	13.	=A=	=B=	=C=	=D=
6.	=A=	=B=	=C=	=D=	14.	=A=	=B=	=C=	=D=
7.	=A=	=B=	=C=	=D=	15.	=A=	=B=	=C=	=D=
8.	=A=	=B=	=C=	=D=					

PART B (10 MARKS)

1. **What is Model-View-Controller(MVC).** briefly explain each of MVC THREE layers? (4 marks)

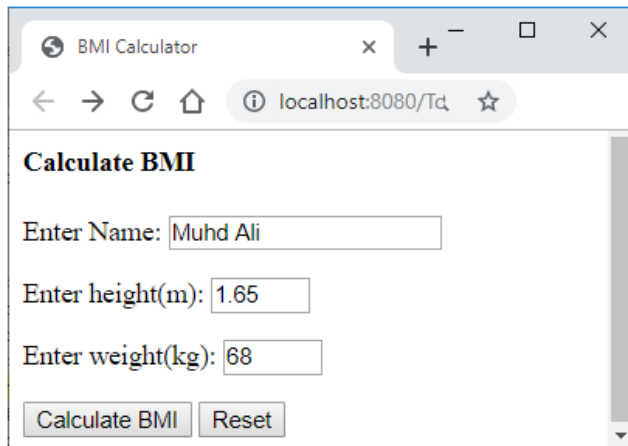
2. Given a Staff Javabean in the following code.

```
public class Staff {  
    private String name;  
    private double salary;  
    public void setName(String name){  
        this.name = name;  
    }  
    public void setSalary(double salary){  
        this.salary = salary;  
    }  
  
    public String getName(){return name;}  
    public String getSalary(){return salary;}  
}
```

- a. Create an instance of the Staff class and associates it with the id attribute converter to be use in the entire JSP with page as the scope attribute. (2 marks)
- b. Assign the Staff properties using the JSP standard set method. (2 marks)
- c. Retrieve the Staff converter properties using the JSP standard get method. (2 marks)

PART C. (10 MARKS)

The purpose of the following Web page in **Figure 1** is to calculate the Body Mass Index (BMI). The user enters name, height in meters and weight in kilograms. The BMI formula is given as: $BMI = \text{weight}(\text{kg}) / \text{height}(\text{m})^2$



BMI Calculator

Calculate BMI

Enter Name: Muhd Ali

Enter height(m): 1.65

Enter weight(kg): 68

Calculate BMI Reset

Figure 1

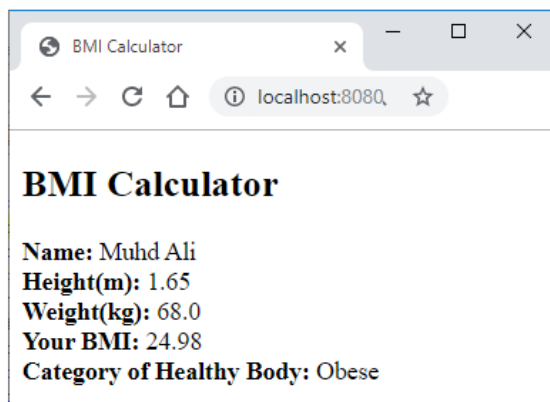
Refer to the table below to determine categories of healthy body weight based on BMI calculator.

BMI range	Category
< 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
> 30.0	Obese

Assume there is existing HTML page that prompts the user to enter height and weight of adult. Click the Calculate BMI button will invoke a JSP to compute BMI and display the category of healthy body weight.

Write the `BMICalculator.jsp` that fulfill the following requirement:

- To handle the two predefined variables using the request parameter object.
- Calculate the BMI.
- Display the result as following:



BMI Calculator

Name: Muhd Ali

Height(m): 1.65

Weight(kg): 68.0

Your BMI: 24.98

Category of Healthy Body: Obese