UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2022/2023

COURSE NAME	:	OBJECT ORIENTED PROGRAMMING
COURSE CODE	:	DAT 20303
PROGRAMME CODE	:	DAT
EXAMINATION DATE	:	JULY / AUGUST 2023
DURATION	:	3 HOURS
INSTRUCTIONS	:	1. ANSWER **ALL** QUESTIONS
		2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK.**
		3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

SECTION A (10 MARKS)

Q1 Java was developed by ----------
- A James Gosling in June 1990
- B James Gosling in June 1991
- C Guido van Rossum in June 1990
- D Guido van Rossum in June 1991

Q2 Which is **NOT** a feature of OOP in general definitions?
- A Efficient Code
- B Code reusability
- C Modularity
- D Duplicate or Redundant data

Q3 Which feature of OOP indicates code reusability?
- A Abstraction
- B Polymorphism
- C Encapsulation
- D Inheritance

Q4 Which among the following **NOT** come under OOP concept?
- A Data hiding
- B Message passing
- C Platform independent
- D Data binding

Q5 Which operator from the following can be used to illustrate the feature of polymorphism?
- A Overloading <<
- B Overloading &&
- C Overloading | |
- D Overloading +=

Q6 Which of the following class is known as the generic class?
- A Final class
- B Template class
- C Abstract class
- D Efficient code

Q7 Which among the following cannot be used for the concept of polymorphism?
- A Static member functions
- B Constructor Overloading
- C Member function overloading
- D Global member function

Q8 Which member of the superclass is never accessible to the subclass?
- A Public member
- B Protected member
- C Private member
- D All of the mentioned

Q9 Which class cannot create its instance?

A Parent class
B Nested class
C Anonymous class
D Abstract class

Q10 How can the concept of encapsulation be achieved in the program?

A By using the Access specifiers
B By using the concept of Abstraction
C By using only private members
D By using the concept of Inheritance

Q11 The object cannot be_____?

A passed by copy
B passed as function
C passed by value
D passed by reference

Q12 The combination of abstraction of the data and code is viewed in_____.

A Inheritance
B Object
C Class
D Interfaces

Q13 Consider the following **Java coding 1.0** and select the right statement.

```
class priceofgood
{
      int pricegood;
      public : int* fun()
      {
            return &pricegood;
      }
};
main()
{
    priceofgood;
    int *ptr = c.fun() ;
    return 0;
}
```

Java Coding 1.0

A The above program violates the feature of encapsulation
B The above program may result in undesirable conditions
C The above program will generate an error
D The above program is good to go

Q14 The principle of abstraction_____

A is used to achieve OOPS.
B is used to avoid duplication
C Use abstraction at its minimum
D is used to remove longer codes

Q15 The following are types of Java Exceptions

I Error
II Exception Handling
III Checked Exception
IV Unchecked Exception

A I and II
B I, II and IV
C I, III and IV
D II, III and IV

Q16 We can write Java programs that deal with many tasks at once. This method is known as

A Architecture Neutral
B High Performance
C Multithreaded
D Platform Independent

Q17 We can execute the Java program on every machine. This method is known as

A Robust
B Portable
C Multithreaded
D Platform Independent

Q18 Select types of memory areas are allocated by JVM

I Heap
II Stack
III Class(Method) Area
IV Program Counter Register

A I and II
B I, II and IV
C I, III and IV
D I, II, III and IV

Q19 Which statement is **TRUE**?

A. JVM, JRE, and JDK are platform dependent because the configuration of each OS is different from each other.
B. JRE is not able to implement of JVM.
C. JDK is a software development environment which is used to develop Java applications only.
D. JDK is an implementation of Macro Edition Java Platform.

Q20 Java has introduced a new Date and Time API since ____.

A J2SE 5
B JavaSE 6
C JavaSE 7
D Java 8

SECTION B (80 MARKS)

Q21 (a) Explain instance method or object method by example.

(5 Marks)

(b) List **FIVE (5)** differences between procedural and object-oriented programming.

(5 Marks)

(c) List **FOUR (4)** features of Java.

(4 Marks)

Q22 (a) Refer **Java Coding 2.0**, predict the expected output.

```
public class TestMain {
public static void main(String[] args) {
Rectangle r1 = new Rectangle(1.2f, 3.4f);
System.out.println(r1);
Rectangle r2 = new Rectangle();
System.out.println(r2);
r1.setLength(5.6f);
r1.setWidth(7.8f);
System.out.println(r1);
System.out.println("length is: " + r1.getLength());
System.out.println("width is: " + r1.getWidth());
System.out.printf("area is: %.2f%n", r1.getArea());
System.out.printf("perimeter is: %.2f%n", r1.getPerimeter());
    }
  }
```

Java Coding 2.0

(8 Marks)

(b) Refer **Java Coding 3.0**, predict the expected output.

```
public class TestMain {
public static void main(String[] args) {
Time t1 = new Time(1, 2, 3);
System.out.println(t1);
t1.setHour(4);
t1.setMinute(5);
t1.setSecond(6);
System.out.println(t1);
System.out.println("Hour: " + t1.getHour());
System.out.println("Minute: " + t1.getMinute());
System.out.println("Second: " + t1.getSecond());
t1.setTime(23, 59, 58);
System.out.println(t1);
System.out.println(t1.nextSecond());
System.out.println(t1.nextSecond().nextSecond());
System.out.println(t1.previousSecond());
System.out.println(t1.previousSecond().previousSecond());
    }
}
```

Java Coding 3.0

(10 Marks)

Q23 (a) Create a class called Book to represent a book. A Book should include four pieces of information as instance variables-a book name. an ISBN number. an author name and a publisher. Your class should have a constructor that initializes the four instance variables.

(11 Marks)

(b) Provide a mutator method for each instance variable.

(6 Marks)

(c) Provide a mutator accessor method (query method) for each instance variable.

(6 Marks)

Q24 (a) Create a super class called Car. The Car class has fields (speed, regular price and colour) and method (Sale Price).

(10 Marks)

(b) Create a sub class of Car class and name it as Truck. The Truck class has fields (weight) and method (sale price).

(15 Marks)

-END OF QUESTIONS –