

**CS/B.TECH/EE/EVEN/SEM-6/EE-604C/2018-19**



**MAULANA ABUL KALAM AZAD UNIVERSITY OF  
TECHNOLOGY, WEST BENGAL**

**Paper Code : EE-604C**

**OBJECT ORIENTED PROGRAMMING**

**Time Allotted : 3 Hours**

**Full Marks : 70**

*The figures in the margin indicate full marks.  
Candidates are required to give their answers in their own  
words as far as practicable.*

**GROUP - A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any ten of the following : 10 × 1 = 10
- i) If a data item is declared as a protected access specifiers then it can be accessed
    - a) anywhere in the program
    - ☒ b) by the base and derived classes
    - c) only by base classes
    - d) only by derived classes.
  - ii) Which of the following is a type of polymorphism in Java ?
    - ☒ a) Compile time polymorphism
    - b) execution time polymorphism
    - c) multiple polymorphism
    - d) multilevel polymorphism.
  - iii) Which of the following is not a keyword in Java ?
    - ☒ a) Boolean
    - b) String
    - ☒ c) Abstract
    - d) Final.

[ Turn over

VI/7413(6)-6154

- iv) Which of the following statements is true regarding constructors ?
- a) A classes must have constructor
  - b) A constructor can be declared private
  - c) A constructor can return a value
  - ☒ d) A constructor must initialize all the fields of a class.
- v) When overloading does not occur ?
- a) More than one method with same name but different method signature and different number or type of parameters
  - b) More than one method with same name, same signature but different number of signature.
  - ☒ c) More than one method with same name, same signature, same number of parameters but different type <http://www.makaut.com>
  - ☒ d) More than one method with same name, same number of parameters and type but different.
- vi) Which mechanism is known as runtime polymorphism ?
- a) Encapsulation
  - b) Method overloading
  - ☒ c) Method overriding
  - d) Inheritance.
- vii) Find the statement that is incorrect
- ☒ a) exceptions are errors that occur at compile-time
  - b) exception is caught using catch
  - c) the catch block must immediately following the try block
  - d) none of these.
- viii) Static nested class can access
- a) final variable of the outer class
  - ☒ b) only static variable of the outer class
  - c) non-static variable of the outer class
  - d) all the member variable of the outer class.

- ix) Determine the option that returns true ?
- ☒ a) "john" == "john"
  - ☐ b) "john".equals("john") ✓
  - ☐ c) "john" = "john"
  - ☐ d) "john".equal(new Button("john"))
- x) The ability to declare different methods with the same name in a class is known as
- ☒ a) overloading
  - ☐ b) overriding
  - ☐ c) recursion
  - ☐ d) none of these.
- xi) What is the main difference the JRE and JDK ?
- ☒ a) The JRE does not include the development tools
  - ☐ b) The JDK does not include the runtime tools
  - ☐ c) The JRE includes the virtual machine
  - ☐ d) The JDK does not include the virtual machine.
- xii) Inner classes are the
- ☐ a) anonymous classes
  - ☒ b) nested classes
  - ☐ c) sub classes
  - ☐ d) derived classes.

### GROUP - B

#### ( Short Answer Type Questions )

Answer any *three* of the following.  $3 \times 5 = 15$

- ☒ 2. Discuss method overloading with proper example. When does the ambiguity problem arise ?  $4 + 1$
- 3. What is the difference between the PATH and CLASSPATH ? What is JVM ?  $2 + 3$
- 4. What is the difference between final ? Finally and finalize in java ? What do you mean by garbage collection in java ?  $3 + 2$
- ☒ 5. What do you mean by interface ? Write the differences between interface and abstract.  $2 + 3$
- ☒ 6. What is an Interface ? Implement Interface in java with a simple code.  $2 + 3$

[ Turn over

**GROUP - C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. What is polymorphism ? Briefly explain the different types of polymorphism present in java with appropriate example. What is constructor ? Explain constructor overloading with proper example.  $2 + 7 + 2 + 4$

✓ 8. What are the different types of inheritance ? What is the way to implement multiple inheritance in java ? Explain constructor chaining with example. What is partial implementation of interface ?

9 a) Describe the complete life cycle of a thread.

b) Mention two methods by which you can stop a thread.

c) Explain how an object reference can be cast to an interface reference.

d) Outline the applet life cycle with state transition diagram.

~~e)~~ Name the different access specifiers in JAVA.

f) Analyze the process of garbage collection in JAVA.  $3 + 2 + 2 + 3 + 3 + 2$

10. a) What are the differences between Method Overloading and Method Overriding ?

b) Explain Dynamic method dispatch with suitable example.

c) Write a program to access static variables and static method to explain "static" keyword properly.  $4 + 4 + 7$

11. Write short notes on any *three* of the following :  $3 \times 5$

a) Wrapper class

b) Collaboration diagram and sequence diagram

✓ c) Applet life cycle

d) Data abstraction and encapsulation

e) Garbage collector in Java.