

**BACHELOR OF COMPUTER APPLICATION**  
**Fourth Semester**  
**PROGRAMMING WITH JAVA**  
**(BCA - 16)**

**Duration: 3Hrs.**

**Full Marks: 70**

PART A (Objective) =20

PART-B (Descriptive)=50

**PART-B (Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**1. Answer the following questions (any five):**

**2×5=10**

- What is an Object and how do you allocate memory to it?
- What is method overloading and method overriding?
- What gives java it's "write once and run anywhere" nature?
- What is a constructor? What is a destructor?
- What is static variable and static method?
- What are final variables and method?
- Explain working of Java Virtual Machine (JVM).

**2. Answer the following questions (any five):**

**3×5=15**

- What are different types of access modifiers (access specifiers)?
- Why main() is preceded by public and static in java?
- What is an interface? What is the difference between abstract class and interface?
- What is Garbage collection? Explain.
- What are the different ways to handle exceptions? Explain.

- f) What is synchronization and why is it important?
- g) Explain the architecture of an Applet.

**3. Answer the following questions (any five):**

**5×5=25**

- a) Describe the syntax for standard Applet tag.
- b) What is multithreading? Explain the different states of a thread.
- c) What is a layout manager? Describe the different types of layout.
- d) Write a program to create a class called Box with a parametrized constructor, along with a method to calculate the volume of the Box. Use the class to find the volume of two boxes whose height, width and depth are 10, 20, 30 and 20, 30, 40 respectively.
- e) Write a program to explain the Exception Handling mechanisms in Java using the keywords: try, catch and finally.
- f) Write a java program to display a simple moving banner.
- g) Explain with an example how call to an overridden method is resolved at run time.

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**Duration: 20 minutes**

**Marks – 20**

**PART-A (Objective)**

**Time: 20 mins**

**Total Marks: 20**

**I. Choose the correct option:**

**1×20=20**

1. Which of these keywords is used to make a class?  
a) class      b) struct      c) int      d) None of the mentioned
2. Which of the following is a valid declaration of an object of class Box?  
a) Box obj = new Box()      b) Box obj = new Box  
c) obj = new Box()      d) new Box obj
3. Which of these operators is used to allocate memory for an object?  
a) malloc      b) alloc      c) new      d) give
4. Which of these statement is incorrect?  
a) Every class must contain a main() method.  
b) Applets do not require a main() method at all.  
c) There can be only one main() method in a program.  
d) main() method must be made public.
5. What is the process of defining more than one method in a class differentiated by method signature?  
a) Function overriding      b) Function overloading  
c) Function doubling      d) None of the mentioned
6. Which of the following is a method having same name as that of its class?  
a) finalize      b) delete      c) class      d) constructor
7. Which keyword is used by method to refer to the object that invoked it?  
a) import      b) catch      c) abstract      d) this
8. Which of these keywords is used to refer to member of base class from a sub class?  
a) upper      b) super      c) this      d) None of the mentioned
9. What is the process of defining a method in subclass having same name & type signature as a method in its superclass?  
a) Method overloading      b) Method overriding  
c) Method hiding      d) None of the mentioned

10. Which of these method of class String is used to extract a single character from a String object?  
a) CHARAT()      b) charat()  
c) charAt()      d) ChatAt()
11. Which of these keywords is used to define packages in Java?  
a) pkg      b) Pkg      c) package      d) Package
12. Which of these access specifiers can be used for a class so that its members can be accessed by a different class in the different package?  
a) Public      b) Protected  
c) Private      d) No Modifier
13. Which of the following is incorrect statement about packages?  
a) Package defines a namespace in which classes are stored.  
b) A package can contain other package within it.  
c) Java uses file system directories to store packages.  
d) A package can be renamed without renaming the directory in which the classes are stored.
14. Which of these can be used to fully abstract a class from its implementation?  
a) Objects      b) Packages  
c) Interfaces      d) None of the Mentioned
15. Which of the following package stores all the standard java classes?  
a) lang      b) java      c) util      d) java.packages
16. Which of these keywords must be used to monitor for exceptions?  
a) try      b) finally      c) throw      d) catch
17. Which of these keywords is used to manually throw an exception?  
a) try      b) finally      c) throw      d) catch
18. Which of these statements is incorrect?  
a) By multithreading CPU's idle time is minimized, and we can take maximum use of it.  
b) By multitasking CPU's idle time is minimized, and we can take maximum use of it.  
c) Two thread in Java can have same priority  
d) A thread can exist only in two states, running and blocked.
19. Which of these methods can be used to output a string in an applet?  
a) display()      b) print()  
c) drawString()      d) transient()
20. Which of the following is used to interpret and execute java Applet classes hosted by HTML?  
a) appletwatcher      b) appletshow  
c) appletviewer      d) appletscreen

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