Lecture 2-classes and objects in java

1. What is the main purpose of Object-Oriented Programming (OOP)?
a) To make programs run faster
b) To organize information based on real-world objects
c) To reduce the number of lines of code
d) To eliminate the need for variables
Answer: b

2. In Java, what is a class?
a) A piece of data
b) A type of method
c) A template defined by the programmer
d) An instance of an object
Answer: c

3. What is an object in Java?
a) A blueprint for creating data
b) A piece of data made from a class template
c) A method within a class
d) A variable declaration
Answer: b

4. Which of the following is true about member variables in a class?
a) They are always public
b) They store data the objects need
c) They can only be accessed by constructors
d) They are defined inside methods
Answer: b

5. What is the purpose of a constructor in Java?
a) To destroy objects
b) To define member variables
c) To create a new object
d) To override methods
Answer: c

6. In Java, where does program execution begin?
a) The first line of any method
b) The first line of the main method
c) The class declaration
d) The first member variable declaration
Answer: b

7. What does the 'static' keyword mean when used with the main method?

a) The method belongs to the class, not objects of the class
b) The method can only be called once
c) The method cannot access member variables
d) The method is private
Answer: a

8. What is method overloading in Java?
a) Creating methods with the same name but different parameters
b) Creating methods with different names but same parameters
c) Overriding methods from a superclass
d) Creating methods that can only be called once
Answer: a

9. What is the main advantage of method overloading?
a) It makes the program run faster
b) It allows for better encapsulation
c) It reduces the need to remember different method names for similar operations
d) It automatically handles type conversion
Answer: c

10. What does the 'public' keyword mean when used with a member variable?
a) The variable can only be accessed within the class
b) The variable can be accessed from any class
c) The variable is constant and cannot be changed
d) The variable is only accessible in the package
Answer: b

11. What does the 'private' keyword mean when used with a member variable?
a) The variable can be accessed from any class
b) The variable can only be accessed within the class
c) The variable is constant and cannot be changed
d) The variable is only accessible in the package
Answer: b

12. What is the purpose of getter methods?
a) To set values of private member variables
b) To create new objects
c) To access values of private member variables
d) To overload constructors
Answer: c

13. What is the purpose of setter methods?
a) To get values of private member variables
b) To set values of private member variables
c) To create new objects

d) To override methods
Answer: b

14. Why is it generally recommended to make member variables private?
a) To improve program performance
b) To reduce memory usage
c) To allow direct access from other classes
d) To control access and maintain data integrity
Answer: d

15. In a memory model, how are primitive type variables represented?
a) As references to objects
b) As boxes containing values
c) As methods
d) As classes
Answer: b

16. In a memory model, how are object variables represented?
a) As boxes containing values
b) As references to objects in the heap
c) As methods
d) As classes
Answer: b

17. What happens when you assign one object variable to another?
a) The object is copied
b) A new object is created
c) The reference is copied
d) The classes are merged
Answer: c

18. What is the scope of a local variable in Java?
a) The entire class
b) The entire program
c) The block in which it is declared
d) Only within constructors
Answer: c

19. What is the scope of a member variable in Java?
a) The entire class
b) Only within methods
c) Only within constructors
d) The block in which it is declared
Answer: a

20. What does the 'this' keyword refer to in Java?
a) The current class
b) The superclass
c) The current object
d) The main method
Answer: c