# JAVA TEST BANK QUESTIONS – CHAPTER 1 – GETTING STARTED

MULTIPLE CHOICE

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| **Question 1** | Java is an object-oriented programming language. An object-oriented language |
| **Answer** | Uses structured programming.  Views a program as consisting of objects which communicate through interactions.  Functionally breaks down problems into smaller, more manageable problems.  All of the above |

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| **Question 2** | In Java, the equal sign is used as the \_\_\_\_\_\_\_\_\_\_\_ operator. |
| **Answer** | increment  decrement  assignment  negation |

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| **Question 3** | In Java, source code is compiled into object code called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Answer** | Bit code  Class code  Method code  Byte code |

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| **Question 4** | The hardest kind of error to detect in a computer program is a: |
| **Answer** | Syntax error  Run-time error  Logic error  All of the above |

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| **Question 5** | Identify the invalid Java identifier. |
| **Answer** | 1Week  Week1  amountDue  amount\_due |

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| **Question 6** | What is the value of the variable amountDue?  **double price = 2.50;**  **double quantity = 5;**  **double amountDue = 0;**  **amountDue = price \* quantity;** |
| **Answer** | 12  12.25  12.5  13 |

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| **Question 7** | What is the value of 7.52e-5? |
| **Answer** | 752000.0  0.0000752  0.000752  0.00752 |

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| **Question 8** | What is the Java expression for 4a2 + 2b \* c? |
| **Answer** | (4 \* a) + (2 \* b) \* c  (4 \* a \* a) + ((2 \* b) \* c)  ((4 \* a \* a) + (2 \* b)) \* c  (4 + a \* a) + ((2 + b) \* c) |

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| **Question 9** | What is the Java expression for 27xy? |
| **Answer** | 27 + (x \* y)  27 \* (x + y)  27 \* x \* y  27x \* y |

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| **Question 10** | The value of the expression (int) 27.6 evaluates to: |
| **Answer** | 28  27  26  None of the above |

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| **Question 11** | Which operator is used to concatenate two strings? |
| **Answer** | +  -  \*  / |

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| **Question 12** | Which operator returns the remainder of integer division? |
| **Answer** | %  /  \*  none of the above |

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| **Question 13** | What is the value of the variable c in the statements that follow?  **String phrase = "Make hay while the sun is shining.";**  **char c = phrase.charAt(10);** |
| **Answer** | w  h  i  None of the above |

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| **Question 14** | The escape sequence the represents the new-line character is: |
| **Answer** | \r  \t  \n  \\ |

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| **Question 15** | The syntax that declares a Java named constant named SALES\_TAX is: |
| **Answer** | double SALES\_TAX = 7.50;  public double SALES\_TAX = 7.50;  public static double SALES\_TAX = 7.50;  public static final double SALES\_TAX = 7.50; |

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| **Question 16** | In Java, a block comment is delimited by: |
| **Answer** | \*/ /\*  /\* /\*  /\* \*/  \*/ \*/ |

TRUE/FALSE

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| **Question 1** | Java began as a language for home appliances. |
| **Answer** | True  False |

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| **Question 2** | Applets were designed to run as stand-alone applications. |
| **Answer** | True  False |

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| **Question 3** | The Java programming language allows you to concatenate two strings using the plus sign. |
| **Answer** | True  False |

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| **Question 4** | Java is an interpreted language. |
| **Answer** | True  False |

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| **Question 5** | Java does not require that a variable be declared before it is used within a program. |
| **Answer** | True  False |

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| **Question 6** | A variable of type boolean can be explicitly converted to that of type int. |
| **Answer** | True  False |

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| **Question 7** | The modulus operator, An implicit type conversion is automatically performed by the compiler when differing data types are intermixed in an expression. %, returns the remainder of integer division. |
| **Answer** | True  False |

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| **Question 8** | The result of integer division is truncated in Java. |
| **Answer** | True  False |

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| **Question 9** | Objects of type String are strings of characters that are written within single quotes. |
| **Answer** | True  False |

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| **Question 10** | In Java, Strings are immutable objects. Immutable objects can be changed. |
| **Answer** | True  False |

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| **Question 11** | An advantage of using the Unicode character set is that it easily handles languages other than English. |
| **Answer** | True  False |

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| **Question 12** | Java uses the ASCII character set. |
| **Answer** | True  False |

SHORT ANSWER

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| **Question 1** | Define high-level languages, machine language and low-level language. Explain how the languages correspond to one another. |
| **Answer** | A computer programming language that resembles natural language or mathematical notation and is designed to reflect the requirements of a problem.  A computer programming language consisting of binary or hexadecimal instructions which a computer can respond to directly.  A low-level language is a programming language that provides little or no abstraction of programming concepts and is very close to writing actual machine instructions  The languages are correspond to each other as they all have to be traslate to each other to be understandable by someone or program. As high level is converted to machine level language to get a little faster for computer to operate or to convert it to machine level language and the same reverse process for human understanding high level language. |

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| **Question 2** | There are two kinds of Java programs, applications and applets. Define and discuss each. |
| **Answer** | A Java program that runs stand-alone in a client or server. The Java Virtual Machine interprets the instructions, and like any programming language running in its native environment, Java programs have full access to all the resources in the computer.  A Java program that is called from a Web page and downloaded from a server. Although Java applets are executed by a Java Virtual Machine just like full-blown Java programs, they do not have access to all the resources in the user's computer. |

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| **Question 3** | What is byte-code? What is its importance? |
| **Answer** | Java bytecode is the machine code in the form of a .class file and main reason behind why java is platform-independent . It is a instruction for java virtual machine crated after java file is compiled.  Bytecodes are non-runnable codes that rely on the availability of an interpreter, this is where JVM comes into play. It is a machine-level language code that runs on the JVM. |

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| **Question 4** | What is the syntax and semantics of a programming language? |
| **Answer** | Syntax is the set of rules that define what the various combinations of symbols mean. This tells the computer how to read the code.  The semantics of a programming language describes what syntactically valid programs mean, what they do.  In the larger world of linguistics, syntax is about the form of language, semantics about meaning. |

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| **Question 5** | What steps must the programmer take to create an executable Java program? |
| **Answer** | Step 1 : Compile your Name.java file in terminal with (javac Name.java) code .  Step2 : Then a Name.class (bytecode) program is create , execute the Name.class file with (java Name) code . |

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| **Question 6** | List the primitive data types Java supports. Indicate the kind of values each type can store. |
| **Answer** | Primitive Data Type :  boolean : True/False  byte : 8 bit integer value  char : Store Charecter with fixed-length field  short : int with 16 bit  int : 2 or 4 byte storage that store positive and negative numbers.  Long : int with 64 bit  float : 2 or 4 byte storage that store integers with decimals numbers as well.  Double : float with 64 bit |

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| **Question 7** | How is the % (modulus) operator used? What is the common use of the modulus operator? |
| **Answer** | % (modulus) operators are comenly used for finding the remainder between division of two number.  t's useful to do simple things like figuring out if a given number is even or odd, as well as more complex tasks like tracking the next writing position in a circular array. |

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| **Question 8** | What are the values of the variables a, b, c, and d after the execution of the following expressions?  **int a = 3; int b = 12; int c = 6; int d = 1; d = d \* a; c = c + 2 \* a; d = d - b / c; c = c \* b % c; b = b / 2;** |
| **Answer** | a = 3  b = 6  c = 0  d = 2 |

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| **Question 9** | Explain the difference between an implicit type cast and an explicit type cast. |
| **Answer** | An implicit type conversion is automatically performed by the compiler when differing data types are intermixed in an expression.  An implicit type conversion is performed without programmer's intervention.  An explicit type conversion is user-defined conversion that forces an expression to be of specific type.  An explicit type conversion is specified explicitly by the programmer. |

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| **Question 10** | What is the output produced by the following lines of code?  **int value1 = 3; int value2 = 4; int result = 0; result = value1++ \* value2--; System.out.println("Post increment/decrement: " + result); result = ++value1 \* --value2; System.out.println("Pre increment/decrement: " + result);** |
| **Answer** | Post increment/decrement: 12  Pre increment/decrement: 12 |

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| **Question 11** | Define the terms class, object, method and method call. |
| **Answer** |  |

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| **Question 12** | What does the String method trim() do? Give an example of its use. |
| **Answer** |  |

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| **Question 13** | What is the output of the following Java statements?  **//String method examples String str = "Java Programming!"; System.out.println(str.equals("Java Programming!")); System.out.println(str.toLowerCase()); System.out.println(str.toUpperCase()); System.out.println(str.substring(5,8)); System.out.println(str.lastIndexOf("m"));** |
| **Answer** |  |

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| **Question 14** | Write a Java statement to access the 7th character in the String variable myString and place it in the char variable c. |
| **Answer** |  |

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| **Question 15** | Write a Java statement to determine the length of a string variable called input. Store the result in an integer variable called strLength. |
| **Answer** |  |

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| **Question 16** | Why is using named constants a good programming practice? |
| **Answer** |  |

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| **Question 17** | How are line comments and block comments used? |
| **Answer** |  |