Section 1

QUE 1: Primitive data type refers to basic data types provided by Java which store simple values directly such as ‘int’, ‘double’ etc while Reference data type refers to those that don’t store objects e.g ‘string’, ‘arrays’ etc.

QUE 2: Scope of a variable :Local variable are those that are declared inside a method or block.They are accessible only within the block of code where its declared while Global variable are those declared outside of all methods, usually within a class but not inside any method.They are accessible from any method within the class (or outside if marked).

QUE 3:Initialization of variables is important because;

1. It prevents compile-time errors in languages that enforce variable initialization.
2. Ensure that the variable has a known and expected starting state.
3. Prevents unpredicted behaviour or runtime errors.

QUE 4:Static variable are those declared with the ‘static’ keyword inside a class but outside any method while Instance variables are those declared in a class but outside any method, not static and Local variables are those declared within a method or block.

QUE 5: Widening casting refers to the automatic conversion from a smaller to a larger type while Narrow casting refers to the manual conversion from a larger to a smaller type.

QUE 6:

|  |  |  |  |
| --- | --- | --- | --- |
| TYPE | SIZE(IN BYTES) | DEFAULT | RANGE |
| boolean | 1 bit | **‘false’** | true,false |
| Char | 2 | **‘\u0000’** | ‘\0000’ to ‘\ffff’ |
| Byte | **1** | 0 | **-128 to 127** |
| Short | **2** | 0 | -215 to +215-1 |
| Int | 4 | **‘0’** | **-2,147,483,648 to 2,147,483,647** |
| Long | **8** | 0L | **-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807** |
| Float | 4 | 00.0f | **Approximately**  **+-3.40282347E+38F(6-7 significant decimal digits)** |
| Double | 8 | **‘0.0d’** | -1.8E+308 to +1.8E+308 |

**\*THEY ONES IN BOLD ARE THE ANSWERS.**

QUE 7:Class in reference to OOP is defined as a blueprint for creating objects,defining data(attributes) and methods(functions) that operate on data.

QUE 8:importance of classes;

1. Encapsulation ie classes bundle data and methods that operate on the data, providing a clear modular structure.
2. Re usability ie once a class is written, it can be reused multiple times.
3. Inheritance ie enables the creation of new classes based on the existing ones promoting codes reuse and extension.
4. Abstraction ie simplifies complex reality by modelling classes appropriate to the problem.
5. Polymorphism ie allows one interface to be used for a general class of actions, enabling code generalization and reuse.