Java Theory Assignment

Unit – 1(Introduction):

1. Explain JDK root directory with diagram.
2. Define UNICODE.
3. Define Byte code.

Unit – 2(Data Type, Variables and Constants, Loops and Logic):

1. Discuss two types of byte ordering with example. Mention the difference between the two.
2. Explain immutable objects.
3. Difference between '==' and equals() in Java.
4. Diffrence between Primitive and reference type.
5. Explain the Encapsulation Feature available in java with reference to Primitive datatype.

---

6. Why Strings Are imutable.

Unit – 3(Defining Classes):

1. Difference between finally, finalize and final keyword.
2. Discuss the use of static Keywords to create field belongs to the class.
3. Define static Method, static variable, static class.
4. Diffrence betwwen static and non static Variables.

---

5. Diffrence between class variables and Instance Variable
6. What so you understand by final keyword. And discuss it's purpose and advantages.

Unit – 4(Extending classes and Inheritance):

1. Define functional programming.
2. Discuss Lambda expressions and its implementation in Java.

Unit – 5(Generics in Java and Commonly used Classes):

1. Discuss the benefit of generic over non-generic types.

2. Discuss autoboxing with reference to the usage of generics
3. What is erasure with reference to generics
4. Can you use primitive types with Generics?
5. Discuss Wildcard and bounded wildcard with reference to Generics
6. Can I cast one instance of generics class into another

---

7. Discuss the purpose of Comparable interface
8. Write shortnotes on 1. Generic constructors 2. Generic Interface 3. Generic Method 4. Generic Functional Interface

Unit – 6(Comparators and Lambda Expressions):

1. Discuss Comparator and Comparable.
2. Define Functional Interface
3. Is Runnable a functional interface? Explain?
4. List at least 5 Predefined Functional Interface

Unit – 7(Exceptions):

1. Discuss Exception and types of Exceptions in Java.
2. Explain exception handling fundamentlas with all the subclasses.
3. ~~Compare all the 5 keywords try, catch ,trow, thows and finally.~~
4. Explain commonly used methods define by throwable.

Unit – 8(Collection Framework, java.time package, java.util package):

Unit – 9(Stream API from java.util.stream package):

1. compare file input stream vs file reader
2. how is file reader diffrent from file input stream
3. Explain 3 standard streams

Unit – 10(The java.io package):

1. Discuss the methods of File object OR Explain reading and writing in files in Java.

2. Difference between Byte Streams and Character Streams.
3. Discuss any five byte stream classes.
4. Explain seven different subclasses of InputStream.
5. Discuss base classes Reader and Writer along with their methods.

Unit – 11(Threads):

1. Explain Thread Life-cycle with diagram.
2. Discuss Application Thread with example.
3. Discuss thread scheduling with example.
4. Explain thread priorities.
5. Discuss inter-process communication.
