FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF INFORMATION AND MEDIA TECHNOLOGY

SECOND SEMESTER 2015/2016 EXAMINATION

COURSE CODE:	CIT 323
COURSE TITLE:	C^{++} AND JAVA
CREDIT UNITS:	3
TIME ALLOWED:	2 HOURS
COURSE LECTURER(S):	MR. S.O. GANIYU
NUMBER OF QUESTIONS:	16 Objective and 3 Essay Questions
NUMBER OF PAGES:	3

INSTRUCTIONS

- Answer all questions
- Do **not** use red pen
- Please use a clear handwriting
- This exam is closed book, closed notes, closed laptop and closed cell phone
- Please use non-programmable calculators only

SECTION A

1. ___ contains tools needed to develop the Java programs. (1 mark)

2. ___opens a JRE, loads the class, and invokes its main method. (1 mark)

3. Java offers ____ class as alternative to String. (1 mark)

4. The selection statement that can be used instead of **if** statement is ____. (1 mark

5. Data flows between program and I/O devices via ___. (1 mark)

6. A method declaration without the body should be declared ___. (1 mark)

7. ___ means having more than one methods with the same name in same class. (1 mark)

8. ___ is a special type of method that allows you to initialize fields or specify how object of a class should be created. (1 mark)

9. A thread is considered dead when it finished executing ___ method. (1 mark)

10. An interface can implement another interface, **True / False**. (1 mark)

11. Thread class has ____ numbers of overloaded constructors for creating object. (1 mark)

12. To commence communication, client program will create Socket object and send it to server program which will create another socket object from the one received from client after invoking ____method of ServerSocket class. (1 mark)

13. How many modes of network communications available in Java? (1 mark)

14. The java.net package provides support for two common network protocols, known as ____ and ___. (2 marks)

15. The two direct subclasses of java.lang.Throwable are___ and ___. (2 marks)

16. All codes written in Java are contained in ____, ____ or ____. (3 marks)

SECTION B

Question 1

a. Describe the following keywords in Java. (4 marks)

(i) finally (ii) try

b. Explain the effect of using final keyword on each of the following: (4 marks)

(i) class (ii) method

c. a. List any two (2) benefits of polymorphism. (2 marks)

Question 2

a. Why is ***java.io.File*** essential in Java file processing (2 marks)

b. Draw and label the lifecycle of java.lang.Thread. (4 marks)

c. Explain the following thread methods. (4 marks)

(i) join (ii) yield

d. Use the code snippet below to answer question (i) to (iv).

```
Exception in thread "main" java.util.InputMismatchException
        at java.util.Scanner.throwFor(Scanner.java:840)
        at java.util.Scanner.next(Scanner.java:1461)
        at java.util.Scanner.nextInt(Scanner.java:2091)
        at java.util.Scanner.nextInt(Scanner.java:2050)
        at account.Scanner.main(ScannerExample.java:347)
```

(i) What do you think caused the code above? (1 mark)

(ii) Which user defined class is responsible for the exception? (1 mark)

(iii) What is the package name of the user defined class? (1 mark)

(iv) On which line did the exception actually originate from? (1 marks)

(v) How many methods were called in the snippet? (1 mark)

Question 3

a. How can you make a current thread to become a daemon thread? (2 marks)

b. Discuss any two (2) challenges of multithreading in Java. (4 marks)

c. Identify the five (5) errors in the code below. You are to state the line numbers and the errors observed. (5 marks)

```
1. import java.io.IOException;
2. import java.net.DatagramPacket;
3. import java.net.DatagramSocket;
4. import java.net.InetSocketAddress
5. public class DataPacketSender {
6.   public int doJob(String hi) {
7.     try {
8.
9.       String data = "Moving up with CODeL";
10.       byte() byteData = data.getBytes();
11.       InetSocketAddress isa = new InetSocketAddress("localhost", 5001);
12.       DatagramPacket dPacket = new DatagramPacket(byteData, byteData.length, isa );
13.       DatagramSocket dSocket = new DatagramSocket(5002);
14.       System.out.println("About to send data as packet ...");
15.       dSocket.Send(dPacket);
16.       System.out.println("Data packet was successfully sent.");
17.       dSocket.closed();
18.     } catch (IOException ioe) {
19.       ioe.printStackTrace();
20.     }
21.   }
```

22. }

d. Write a Java application called ***Sport*** in a package named **n*iger***. The class should be a subclass to another concrete class named ***Hockey*** which is contained in a package called ***minna***. The application should display "***throw, hit and run fast***" when it runs. (4 marks)

Best of luck.