FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF INFORMATION AND MEDIA TECHNOLOGY

SECOND SEMESTER 2014/2015 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:	15 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. ___ thread is used to perform background activities. (1 mark)

2. A class having at least one of the methods declared without implementing the body should be declared as ___ class. (1 mark)

3. An object in Java maintains reference to itself using___ keyword. (1 mark)

4. ___ keyword is used when a class needs to subclass an interface. (1 mark)

5. ___ method is invoked by programmer to execute a thread. (1 mark)

6. ___ is the root of all exception and errors in Java. (1 mark)

7. The superclass of all unchecked Exceptions is ___ . (1 mark)

8. ___ method can be invoked by programmer to move a thread in running state to ready state. (1 mark)

9. ___ class is used by server application to acquire port and listen for client requests on server computer. (1 mark)

10. When ___ method is called, an arbitrary thread is chosen among all the thread in Waiting state and it will transition to Lock Seeking state. (1 mark)

11. Data flows between program and I/O devices via ___ which serve as conduits or connectors. (1 mark)

12. The default port number used by ServerSocket when none is specified by programmer is___. (1 mark)

13. The finally{} block of exception handling construct will not execute until an exception is caught **True / False**. (1 mark)

14. An abstract class can have protected modifier? **True / False**. (1 mark)

15. An abstract method can have private modifier? **True / False**. (1 mark)

SECTION B

Question 1

a. Identify the error(s) in the snippet below, if any. (6 marks)

```
i.    File folder = new File("c:\snail");
ii.   if (!folder.exist()) {
iii.  System.out.println("how are you?");
iv.   resFolder = folder.mkdir();
v.    if (resFolder) {
vi.   System.out.println("I am fine");
vii.  }
```

b. Suppose ***snail*** in question 1(a) above is present in drive C of the computer, and you have corrected the error(s) if you think there is/are, what will the code display? (3 marks)

c. Describe the three (3) purposes of catching an exception in Java program. (6 marks)

Question 2

a. Write a Java thread class called **CIT323** by using Runnable interface. The class should be in a package called **imt.cit323** and an object of the class should display "Citadel of knowledge" when given a chance to execute. (5 marks)

b. Write a Java application called **CIT323App** in **imt.cit516** package. The application should execute an object of **CIT323** class that was created in question 2(a) above. (5 marks)

c. Describe five (5) of the characteristics of Java interface. (5 marks)

Question 3

a. Study the snippet below and use it to answer questions i-v.

```
1.      try {
2.          Scanner scan = new Scanner(System.in);
4.          String servName = “banana”;
5.          int portNum = 4404;
6.          System.out.println("About to connect to " + servName + " on port " + portNum);
7.          Socket clientSoc = new Socket(servName, portNum);
8.      System.out.println("Connection to " + clientSoc.getRemoteSocketAddress() +" was
successful");
9.          OutputStream outToServ = clientSoc.getOutputStream();
10.           DataOutputStream dos = new DataOutputStream(outToServ);
11.           dos.writeUTF("Greetings from " + clientSoc.getLocalSocketAddress());
12.           InputStream inFromServ = clientSoc.getInputStream();
13.           DataInputStream dis = new DataInputStream(inFromServ);
14.           System.out.println("Server says " + dis.readUTF());
15.           clientSoc.###;
16.     } catch (??? e) {
17.
18.     }
```

i. What is the use of try-catch block in the snippet? (1 mark)

ii. Apart from java.lang.Exception, which other exception can replace *???* in line 16? (1 mark)

iii. Suppose no other operation is required from ***clientSoc*** object after line 14, which method should replace ### in the code? (1 mark)

iv. In line 8, what will ***clientSoc.getRemoteSocketAddress()*** return? (1 mark)

v. What is the purpose of ***DataOutputStream(outToServ)***? (1 mark)

b. Explain the properties that can be specified for constructor of a thread? (6 marks)

c. Briefly describe two (2) of the benefits of polymorphism. (4 marks)

Best of luck.