

International Islamic University Chittagong (IIUC)

Department of Electronic and Telecommunications Engineering

Final Examination

Program: B.Sc. (Engg)

Semester: Autumn 2018

Course Code: ETE-3525

Course Title: Object Oriented Programming with Java

Time: 2 hour 30 minutes

Full Marks: 50

[Group A]

[Answer any *two* sets of questions]

- [1] (a) Explain the differences between method overloading and method overriding in Java. 5
- (b) An employee working in IIUC IT department as a programmer who gets 40,000.00 BDT as a salary. All employees working in IT department receive same amount of salary regardless of their level of designation. Besides, the particular programmer received bonus (10000.00 BDT) this month for his outstanding performance as a programmer. Write a Java program to print both salary and bonus of this employee that depicts **IS-A** (Programmer is an employee) relationship of inheritance. 5
- [2] (a) Explain the following code block written in Java: 2
- ```
class Subclass-name extends Superclass-name
{
 //methods and fields
}
```
- (b) Illustrate the usages of final keyword in Java. 3
- (c) Write a Java program that illustrates how super keyword is used to refer immediate parent class instance variable. 5
- [3] (a) Define an Exception? 1
- (b) Explain the purpose of Exception handling mechanism. 3
- (b) Define an Exception called "**NoMatchException**" that is thrown when a string is not equal to "IIUC". Write a Java Program that uses this exception. 6

**[Group B]**

*[Answer any **three** sets of questions]*

- [4] (a) Illustrate the differences between single-threaded and multi-threaded program. 5  
(b) Write a Java program to implement multithreading by extending the thread class. 5
- [5] (a) "In java it is not possible to implement multiple inheritance without interface." – 2  
Justify this statement.  
(b) Write short notes: 3  
I. java.lang  
II. java.io  
III. java.awt  
(c) Write a Java program to calculate the Area of a circle as well as the area of a rectangle by implementing interfaces. 5
- [6] (a) Define a package? 2  
(b) Summarize the benefits of using package in Java? 3  
(c) Design a package to contain the class student [field variable (roll number of a student), methods (getrollnumber() and putrollnumber())] and another package to contain the interface performance [field variable (CT\_attendance)]. Write a Java program to calculate the total marks (Midterm + Final term + performance) of course ETE3525 of a particular student by importing these two user defined packages. 5
- [7] (a) Define a stream? 1  
(b) Distinguish between random access file and sequential file. 3  
(c) Write a Java Program that will 6  
➤ create a file namely **invent.dat**  
➤ get input interactively from keyboard. (input includes code number of items, number of items, and cost)  
➤ put that information to the invent.dat file  
➤ process the data stored in the file (total cost = total items \* item cost)  
➤ display the following information to the console from the file (Code number, number of items, cost per item, total cost)