

KABARAK



UNIVERSITY

EXAMINATIONS

2008/2009 ACADEMIC YEAR

**FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT
& INFORMATION TECHNOLOGY**

COURSE CODE: BMIT 327

**COURSE TITLE: OBJECT ORIENTED ANALYSIS AND
DESIGN**

STREAM: Y3S2

DAY: TUESDAY

TIME: 9.00 – 11.00 A.M.

DATE: 11/08/2009

INSTRUCTIONS:

Answer Question 1 and three other Questions

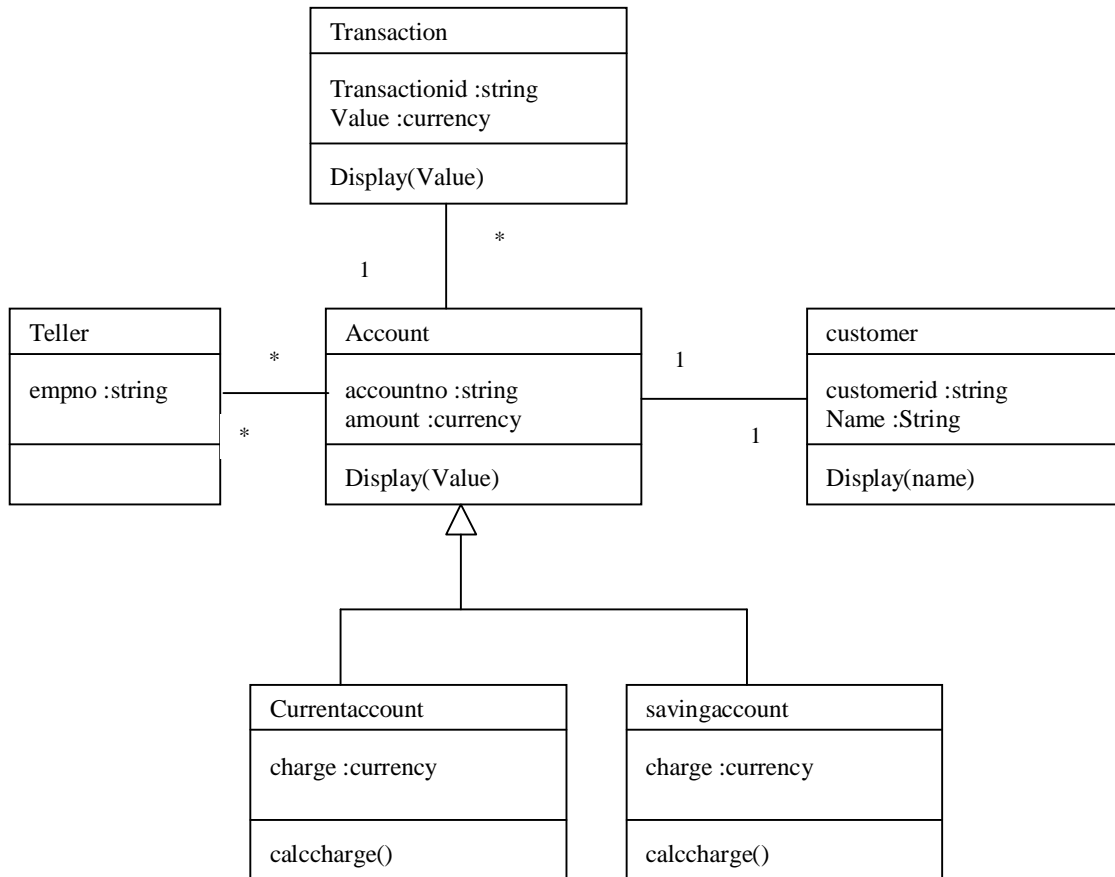
PLEASE TURNOVER

QUESTION 1 (20 MARKS)

- (a) Explain the following terms as used in object-oriented paradigm.
- (i) Inheritance. (1 Mark)
 - (ii) Information hiding. (1 Mark)
 - (iii) Implementation hiding. (1 Mark)
 - (iv) Encapsulation (1 Mark)
- (b) How are characteristics in 1(a) Implemented in UML (2 Marks)
- (c) Describe the unified development process (3 Marks)
- (d) Draw a state diagram for elevator control system. (3 Marks)
- (e) Write a Java program that asks a user to enter start, end numbers and increment and displays the cubes of numbers in the range. Include necessary validation and headings (3 Marks)
- (f) Describe how you can use walk through to test UML analysis diagrams (2Marks)
- (g) Explain six principles of user interface design (3 Marks)

QUESTION 2 (10 MARKS)

- (a) Explain how you would implement the following class diagram in a relational database. (2½ Marks)



- (ii) Explain the advantages and disadvantages of implementing above class diagram in relational database instead of object oriented database (2 Marks)
- (b) Explain how JDBC objects implement object oriented abstraction (2 Marks)
- (c) Describe three ways of overcoming difficulties of systems analysis (1½ Marks)
- (d) Explain object oriented paradigm and give two examples (2 Marks)

QUESTION 3 (10 MARKS)

- (a) (i) Develop a use case diagram for a savings Cooperative system with at least 4 use cases. (1½ Marks)
- (ii) Draw a scenario for one use case in (i) with at least 8 steps. (1½ Marks)

- (b) Draw a class diagram for an order processing management system with at least six classes, each class should have one attribute and one operation attributes, inheritance and association. (3 Marks)
- (c) Draw a sequence diagram for a personnel recruitment process with at least 8 steps (4 Marks)

Question 4 (10 Marks)

- (a) Describe the components of Object Oriented Database Management system (3 Marks)
- (b) Discuss three disadvantages of using Modeling languages to develop systems (1½ Marks)
- (c) Write a Java program that reads a text file names.txt and displays the result. (3 Marks)
- (d) Discuss benefits of software reuse with reference to Java user interface (2½ Marks)

Question 5 (10 Marks)

- (a) (i) Draw an activity diagram for borrowing money from a savings cooperative. A member has to contribute to cooperative for at least six months before taking a loan and should pay the loan in maximum of 36 months. The user to enter: the month member joined the cooperative, the loan required, the number of months loan will be repaid and monthly payment amount. The cooperative charges 1% on a reducing balance. Validate inputs (2½ Marks)
- (ii) Write a java program to implement activity diagram in 5 a (i). The program displays reports of all payments, balances, repayment month and necessary headings until the loan is over. (3½ Marks)
- (iii) Discuss any four Object oriented features of above program in 5 a (ii) (2 Marks)
- (b) Explain four principles common to Analysis models (2 Marks)