

**W1-2-60-1-6**

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2016/2017**

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

**DIT 0305 : OBJECT ORIENTED ANALYSIS AND DESIGN**

**DATE: APRIL 2017 TIME: 1.30 HOURS**

**INSTRUCTIONS:**

**ANSWER QUESTION ONE [COMPULSORY] AND ANY OTHER TWO QUESTIONS**

**==========================================================**

**QUESTION ONE [20 MARKS]**

Assume you are a system developer and have been contracted by ABC bank to

design an Auto-teller machine [ATM) system to be used for banking services.

1. Write down any five scenarios for the Auto-teller machine [5 marks]
2. Identify any thee objects and three relationships form the scenario developed [5 marks]
3. Draw a use case diagram using the Auto-teller scenario [10 marks]

**QUESTION TWO [20 MARKS]**

1. Explain briefly the following concepts as used in object-oriented analysis and design
2. Objects [3 marks]
3. Class [3 marks]
4. Inheritance [3 marks]
5. Polymorphism [3 marks]
6. Encapsulation [3 marks]
7. Draw a UML diagram of the class employee and include the possible attributes and operations [5 marks]

**QUESTION THREE [20 MARKS]**

1. Explain the meaning of package diagrams [4 marks]
2. Identify four items required in drawing the interaction diagrams [4 marks]
3. Discuss any four functions of interaction diagrams [12 marks]

**QUESTION FOUR [20 MARKS]**

Describe briefly the following UML language diagrams

1. Class diagrams [5 marks]
2. Component diagrams [5 marks]
3. State diagrams [5 marks]
4. Deployment diagrams [5 marks]

**QUESTION FIVE [20 MARKS]**

Using relevant diagrams, evaluate the five stages of object oriented design. [20 marks]