

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

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2016/2017**

FIRST YEAR SECOND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

**DIT 0205 : ELEMENTARY MATHEMATICS AND DECISION MAKING**

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

**INSTRUCTIONS:**

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

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**QUESTION ONE [30 MARKS]**

1. The table below represents company sales

Month Sales

January 1200

February 1280

March 1310

April 1270

May 1190

June 1290

July 1410

August 1360

September 1430

October 1280

November 1410

December 1390

Required:

1. Calculate
2. 3 monthly moving average [5 marks]
3. 6 months moving average [5 marks]
4. State three characteristics of moving average [3 marks]
5. Solve:  [2 marks]
6. Solve the equation below using the quadratic formula,

 [5 marks]

1. XYZ company limited is considering 3 possible capital presents for next year. Each project has one year of life and presented returns depends on the next years state of economy. The estimated rates of return are shown below:

State of economy Probabilities Returns (%)

A B C

Recession 0.25 10 9 14

Average 0.5 14 13 12

Boom 0.25 16 18 10

Required:

Compute the projects expanded marketing value [5 marks]

**QUESTION TWO [15 MARKS]**

Some stock items at a production plant may be classified into one or more of the

three categories. One P for perishable, S for special order and E for Export. 24

items are not classified. 6 items were classified as P only, 8 items were

classified as E only, 4 items were classified as S only. Exactly 7 items were

classified into 2 special categories and no items were classified into all the three.

Give also that there were 14 export items and 9 special items , find using

Venn diagrams:

1. How many items were classifies as perishable [7 marks]
2. How many different stock items are held. [8 marks]

**QUESTION THREE [15 MARKS]**

1. If interest rat is 6% and compounded monthly, what is the future value? Where the mortgage is shs 33 000. [3 marks]
2. Differentiate  [3 marks]
3. Integrate  [2 marks]
4. Evaluate  [3 marks]
5. From a pack of playing cards, the Ace, King, green, Jack and ten of spades are take. In how many ways can three of these five cards be placed in a raw from left t right [2 marks]
6. Simplify  [2 marks]

**QUESTION FOUR [15 MARKS]**

1. A firm is considering two mutually exclusive projects. Project X has mutual cost outlay of shs 25 000 and project Y has an initial cost outlay of shs 250 000. Net cash flows are as follows:

Year Project X Project Y

1 17350 147925

2 17350 157925

The firms cost of capital is 10%

Required :

Calculate the NPV of each project [8 marks]

1. Given that area order the curve y = ax2+3 and the lines x=0 and x=2 is 14 square units. Find the value of a [5 marks]
2. Solve for y in  [2 marks]