**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya.**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2015/2016**

THIRD YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION

**BFB 3362: DECISION MAKING IN PROJECTS**

**DATE: AUGUST, 2016 TIME: HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions.*

**QUESTION ONE (30 MARKS)**

1. Discuss any specific four steps in decision making in projects. (4 Marks)
2. Explain the following terms as used in decision making:
3. Decision maker (2 Marks)
4. Pay-off (2 Marks)
5. The Acts (2 Marks)
6. Outcomes (2 Marks)
7. A businessman has three alternatives open to him each of which can be followed by any of the four possible events. The conditional payoffs (in sh) for each action – event combination are given below;

 **Pay-offs**

**Alternatives:** A B C D

x 16 0 -20 12

y -8 24 36 -4

Z 28 12 0 16

Determine which alternative should the businessman choose. If he adopts the following criteria;

1. Maxmin criterion (2 Marks)
2. Maxmax criterion (2 Marks)
3. Hurwitz criterion –his degree of optimism beng 0.65 (4 Marks)
4. Laplace criterion (4 Marks)
5. Discuss decision trees as tools for making decisions. What are the advantages and disadvantages? (6 Marks)

**QUESTION TWO (20 MARKS)**

1. Meru Industrial Mills (M.I.M) is considering whether to enter a very competitive market. Incase M.I.M decides to enter this market, it must either install a new processing machine or pay overtime wages to the entire workers. In either case, the market entry could result in:
2. High sales
3. Medium sales
4. Low sales
5. No sales

Construct an appropriate tree diagram. (6 Marks)

1. Suppose the management of M.I.M has estimated that if they enter the market there is a 60% chance of their stockholders approving the installation of the new machine. A random sample of the current market structure reveals that M.I.M has 40% chance of achieving high sales, 30% chance of achieving high sales , 20% chance of achieving low sales, and 10% chance of achieving no sales. Construct the probability tree and determine the joint probabilities for various branches. (12 Marks)
2. Advice M.I.M on the above basis. (2 Marks)

**QUESTION THREE (20 MARKS)**

1. A manager wants an estimate of sales of salesmen in his company. A random sample of 100 out of 500 salesmen and average sales found to be sh. 75,000. If a sample standard deviation is sh. 15,000 then find out the population mean at 99% level of confidence. (5 Marks)
2. A sample of 400 farmers was taken and it was found that 55% are in favour of seeds ‘A’ for their planting in their farms. With 95% confidence what population of all the farmers are in favour of seeds A? (5 Marks)
3. Discuss hypothesis testing ,briefly explaining the four outcomes in hypothesis testing

 (5 Marks)

1. It is required to test the hypothesis that 50% of households have freezers. A random sample of 400 households found that 54% of the sample had freezers. Test at 5% significance level. (5 Marks)

**QUESTION FOUR (20 MARKS)**

1. Discuss linear programming as a model for making decisions in projects. (6 Marks)
2. The factory employs 200 skilled workers and 150 unskilled workers who work a 40 hours week. The time to produce 1 unit of each product by the two types of labour are given below;

Products

A B C D

 Skilled hours 5 3 1 8

 Unskilled hours 5 7 4 11

**Required:**

State the linear program problem mathematically and hence use the graphs to solve:

(14 Marks)

**QUESTION FIVE (20 MARKS)**

1. Discuss transportation model as a tool for decision making. What are the advantages of using transportation model? (6 Marks)
2. A firm of office equipment supplies has three depots located in various towns. It receives orders for a total of 15 cabinets from four customers. In total in the three depots there are 15 cabinets and the management with to minimize delivery costs by dispatching the cabinets from the appropriate depot for each customer. Details of the availability, requirements and transport costs per cabinet are given in the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cabinets Required | A3 | B3 | C4 | D5 | Total15 |
| Depot A  B C | 667 | 131718 | 111418 | 151215 | 201312 | Transport cost per cabinet |
|  | 15 |  |  |  |  |  |

**Required:**

The minimum cost in delivering the cabinets from various depots to the various destinations. (14 Marks)