JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS & ECONOMICS

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS ADMINISTRATION WITH IT

1ST YEAR 2ND SEMESTER 2019/2020 ACADEMIC YEAR

COURSE CODE: ABA 107

COURSE TITLE: Management Mathematics

EXAM VENUE: **STREAM: (BBA)**

DATE: **EXAM SESSION:**

TIME: 2 HOURS

Instructions:

1. Answer questions ONE and ANY other 2 questions
2. Candidates are advised not to write on the question paper.
3. Candidates must hand in their answer booklets to the invigilator while in the examination room

1 a) Out of 600 Jua kali workers, it was determined that 310 listened to 7 O'clock news while 370 listed to late night news.120 listened to both news casts.

Determine the number that listened to:

   I.   7 O'clock news only.

  II.   Late night news only.

 III.   Exactly one of the news casts.

 IV.   At least one news casts.

  V.   None of the news casts

 VI.   Represent this information on venn diagramme   (15 mrks)

b) I) Mr.Otieno borrowed some money at 12% p.a simple interest. After 5yrs he paid Sh. 128,000. Calculate the sum of money he borrowed.   (3 mrks)

ii) Mrs. Juma invested Sh. 27,500 and this amounted to Sh. 31,075 within 1year. Find the rate of compound interest.   (3 mrks)

iii) Jane invested Sh. P for 4years at 11% p.a Sh.170,963 was realized as compound interest. Find the value of Sh. P   (4 mrks)

c) The furniture shop makes tables and chairs. The cost of making 8 tables and 5 chairs is Sh. 1400. The cost of making 3 tables and 7 chairs is Sh. 730. The shop makes profit of 30% and 40% respectively on each table and chair respectively.

i) Express the above cost of making tables and chairs inform of simultaneous equation.   (2 mrks)

ii) Calculate the cost of making a table and a chair.   (3 mrks)

iii) Calculate the selling price of a table and a chair.   (2 mrks)

Q2. Solve for X in the equation

   I. $4x^2-10x+6=0$ (4 mrks)

  II.   Draw the graph of $y = 4x-3$ (4 mrks)

 III.   Solve graphically the simultaneous equation.

        2x-y=-1

        x-2y=4   (8 mrks)

iv) Find the simple interest on Sh. 80,000 interest for 5years at 9% per annum   (4 mrks)

Q3. a) Define

  i.   A set
  ii.   Sub-set
  iii. Disjoint set
  iv.   Universal set

 b) A survey of 117 house hold was carried out in Bondo town to find out the number of households that watched TV channels A,B and C respectively. The result of the survey were as follows:

  i.   42 of the house watched channel A
  ii.   52 of the house hold watched channel B
  iii. 51 of the house hold watched channel C
  iv.   11 watched both channel A and c
  v.   17 watched both channel B and C
  vi.   5 of the households watched all the channels.
  vii. Represent the above information in a venn diagram
  viii. Determine the number of households that watched none of the three channels   (10 mrks)

Q4. Draw the graph of:

  a) $Y=4x^3 - 12x^2 - 2x+30$, for $-2, \leq x \leq 4$
  b) Draw the graph of $y = x^2 - 2x - 3$ for $-3 \leq x \leq 5$
  c) Solve for x in $4x^2 - 4x-3 = 0$ (20 mrks)

Q5. i.   Define annuities

  ii.   Give two types of annuities and give the formular for calculating each.   (6 mrks)
  iii. An investor have Sh. 5000 which he deposited in a bank at 10% per annum. What will be the value of its investment at the end of 4th year.   (4mks)
  iv.   Benerd deposited sh.15000 at the end of each year, for the next 4 years at interest rate of 10% P.a .Determine the compound sum of the annuity   (10 mrks)