MACHAKOS UNIVERSITY

University Examinations 2020/2021 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF MATHEMATICS AND STATISTICS

FIRST YEAR FIRST TERM EXAMINATION FOR

CERTIFICATE IN FOOD AND BEVERAGE

FASHION DESIGN

MATHEMATICS

DATE: 8/6/2021   **TIME: 2.30-5.30 PM**

INSTRUCTIONS:
Answer **ALL** the questions in this paper.

1.   Evaluate:

   a) $\underline{3½}$ x $4^2/_3$ ÷ $6^5/_6$ -1½ + $^1/_2$ (5 marks)

   b)   Simplify

   $$\frac{2^2 X 4^2 X 16^{1/2}}{8^2}$$ (3 marks)

2.   a)   Solve the equation $\frac{X-3}{4} = x - \frac{2x-y}{3}$ (4 marks)

   b)   Calculate the compound interest on Sh. 21,000 invested in 5 years at a rate of 15% per

   year.   (5 marks)

3.   a)   A man is $3\frac{1}{2}$ times as old as his son. If the sum of their ages is 81 years, find the ratio

   of the father's age to the son's age. Hence determine the age of the father. (5 marks)

   b)   Make t the subject in R = $\sqrt{\frac{X+2t}{h}}$ (3 marks)

4.   If y varies as the square of x

   a)   What happens to y when x is trebled?   (2 marks)

   b)   Find y when x = 3, given that y = 12, when x = 2.   (3 marks)