



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF MATHEMATICS AND STATISTICS

FIRST YEAR THIRD SEMESTER EXAMINATION FOR

CERTIFICATE IN FOOD AND BEVERAGE

CERTIFICATE IN FASHION DESIGN

1802/101/M, 1801/101/M: MATHEMATICS

DATE: 18/12/2020

TIME: 8.30-11.30 AM

INSTRUCTIONS

ANSWER ALL THE QUESTIONS

1. a) Evaluate:

$$\frac{3\frac{1}{7} - 1\frac{5}{14}}{4 - \frac{17}{27}}$$

- b) i. $10 P_6 \div 8C4$

ii $\frac{6! \times 8!}{9! \times 4!}$

- c) $-14 \times -13 + 19 \div -4 (-5)$

2. The gradient of a straight line is 6, if it passes through the point Q (2,14), determine the value of y when x = 4 and the y-intercept.
3. P varies directly as the cube of t and inversely as the square root of n. If P = 16 when t = 2 and n = 9, calculate the value of P when n = 16 and t = 5.
4. a) The cost price of an article is a quarter of its selling price, Find the profit percentage.
- b) The probability of A and B failing in a week's time are $\frac{1}{4}$ and $\frac{2}{3}$ respectively.
- Determine the probability that at least one of them fail in a weeks' time.
5. From the table below find the mean and the standard deviation.

CLASS	F
20 - 40	5
40 - 60	10
60 - 80	8