



# MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF MATHEMATICS STATISTICS AND ACTUARIAL SCIENCE

FIRST SECOND SEMESTER EXAMINATION FOR

ARTISAN IN FOOD AND BEVERAGE

MOTOR VEHICLE ENGINEERING

WELDING AND FABRICATION

WELDING AND FABRICATION

ELECTRICAL ENGINEERING

GARMENT MAKING

PLUMBING

MATHEMATICS

DATE: 16/4/2019

TIME: 8:30 – 11:30 AM

## INSTRUCTIONS

Answer all the questions from this section.

### SECTION A:

- Convert the recurring decimal 0.6666 into a fraction (3 marks)
- What is the value of  $0.33 \times 0.45$ 
  - Correct to 1 decimal place
  - Correct to 2 significant figures
  - In standard form (3 marks)
- Given  $A=510$ ,  $P=500$  and  $x=0.04$  find the value of  $m$  in the expression

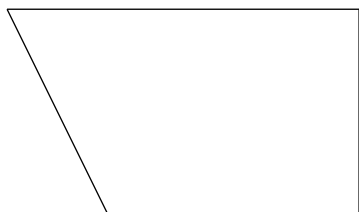
$$A = P \left( 1 + \frac{mx}{12} \right)$$

- Evaluate  $2\frac{1}{2} \times 3\frac{2}{3} \div 5\frac{5}{6}$  (3 marks)
- Solve the simultaneous equations of using elimination method (4 marks)

$$2x+4y=6$$

$$3x+y=-1$$

6. The figure shows a trapezium: calculate its area (3 marks)



7. A tuk tuk travels 15km at 30km/hr and a further 15km in 20 minutes. Determine the average speed of the journey. (3 marks)
8. Make G the subject of the formula

$$V = \frac{K + \frac{4}{3}G}{P} \quad (6 \text{ marks})$$

**SECTION B: ANSWER ANY TWO QUESTIONS FROM THIS PART.**

9. a) A watch was purchased for k£13.20 because a discount of 12% was allowed. Find the marked price of the watch. (k £1= ksh 20) (4 marks)

- b) Arrange the following fractions in descending order:

$$\frac{4}{9}, \frac{11}{18}, \frac{2}{3}, \frac{10}{27} \quad (4 \text{ marks})$$

10. a) The following are marks scored by 20 students in a math's test

11,3,6,8,6,6,9,8,8,13,5,13,10,9,5,5,3,4,5,5

Determine

- i) The mode  
ii) The median  
ii) The mean score (4 marks)
- b) From a point, the angle of elevation of a tower is  $30^\circ$ . if the tower is 20m away from the point, what is the height of the tower (4 marks)
11. a) solve the equation  $\frac{2x-5}{3} - \frac{3x-1}{4} = \frac{3}{2}$  (3 marks)
- b) A line passes through p (3-2) and has a gradient  $-2/3$ . What is the equation of the line? (3 marks)
- c) The ages of a father and his son are in the ratio of 12:4. If the father is 30years older than the son, find the sum of their ages. (2 marks)