



GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS JANUARY – APRIL 2019 SEMESTER

FOUNDATION CERTIFICATE IN HEALTH SCIENCE

COURSE CODE: FCHS 001

COURSE TITLE: BASIC MATHEMATICS

DATE: 9 APRIL 2019

TIME: 3.00 PM – 6.00 PM

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY**.
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

CAUTION: *All exam rooms are under CCTV surveillance during the examination period.*

SECTION A**[ANSWER ALL QUESTIONS IN THIS SECTION]****MULTIPLE CHOICE QUESTIONS [1-5]****[ONE MARK EACH]**

1. Which of the following is equal to 5.93×10^2 ?
 - A. 0.0593
 - B. 0.00593
 - C. 593
 - D. 5930
 - E. 59.30

2. Solve the following: $-(-3)^2 = ?$
 - A. .9
 - B. -27
 - C. -9
 - D. 27
 - E. 3

3. $5 \times -2 - 8(-)12 + 16 \div -8 = ?$
 - A. 6
 - B. -8
 - C. -16
 - D. -6

4. Concrete is made by mixing screenings cement and sand in the ratio 3:1:15. How much sand would be needed to make 125 tonnes of concrete?
 - A. 45 tonnes
 - B. 75 tonnes
 - C. 27 tonnes
 - D. 33.75 tonnes

5. The lowest temperature on a winter morning was -8°F . Later that same day the temperature reached a high of 24°F . By how many degrees Fahrenheit did the temperature increase?

[1 mark]

 - A. 3°
 - B. 8°
 - C. 16°
 - D. 24°
 - E. 32°

SHORT ANSWER QUESTIONS: (ANSWER ALL QUESTIONS IN THIS SECTION)

1. The area of a rectangle is 60 cm^2 . If its length is 12 cm, calculate its width in metres? [5 marks]
2. Solve the following pair of equation [5 marks]
 $6x - 4y = 8$
 $2y + 4x = 10$
3. Solve the for x in the following equation $3x^2 + 17x + 20 = 0$ [5 marks]
4. b) Simplify $7a - 5b - (2a - 4b)$ [5 marks]
5. If the ratio of oranges to mangoes in a box is 5:8 and the number of oranges are 30, find the number of mangoes [5 marks]
6. The square of a number is 4 more than two times the number. Find the number [5 marks]
7. The length of a rectangle is 6 cm and the width is 4 cm. If the length is greater by 2 cm, what should the width be so that the new rectangle has the same area as the first one? [5marks]

SECTION B

[CHOOSE ANY THREE QUESTIONS]

1.
 - a) Gretsia university school fee for degree level was changed from 35, 0000 in the year 2017 to ksh 45,000 in the 2018, in what ratio did the fee change? [8 marks]
 - b) Secondary school bursaries is shared based on ratios of the population of students. STAREHE constituency has 120, 000 people and received ksh. 4 million. How much did:
 - i) Mathare constituency with 25,000 people receive? [6marks]
 - ii) Thika constituency with 500, 000 people receive? [6 marks]
2.
 - a) Using the laws of logarithms solve the following equation without using tables and/ or calculators
 - i) Evaluate $\log_5 25$ [6 marks]
 - ii) If $\log_{10} 2 = 0.3010$, $\log_{10} 7 = 0.8451$, $\log_{10} 3 = 0.4771$; obtain: $\log_{10} 105$ [8marks]
 - b) Mercy used Ksh. 480 to buy 12 books and 7 pencils. Her brother used Ksh. 295 to buy 6 books and 4 pencils. What is the total buying price of each? [6 marks]

3.

- a) If $a + b : 2a - b = 2 : 3$ Obtain the ratio $x:y$ [6 marks]
- b) The ratio of width of a table to its length is 3:6. If its length is 6 m find its area. [6 marks]
- c) A diesel –powered car uses 1 litre of diesel for every 9.9 km. how much diesel will it consume in total if it travels for 260 km in the first day and 100 km second day? [8 marks]

4.

- a) a farmer packs orange fruits for sale in boxes of 6,8,or 18 fruit. What is the smallest pack that can be packed [8 marks]
- b) a minibus can carry ferry 30 passengers when full. The fare between the two towns, Thika and Kasarani, is Ksh 70 shilling. On one way. the mini bus makes 3 trips between the two towns on a particular day. The driver and the conductor are paid daily allowance of Ksh 1000 and Ksh 500 respectively. A further Ksh 6000 is set aside for fuel, maintenance and insurance. If the minibus is full in every trip on a certain day, what is the net profit for the day? [12 marks]