GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS

JANUARY – APRIL 2017 SEMESTER

BRIDGING COURSE IN MATHEMATICS

COURSE CODE: GUBC 011

COURSE TITLE: BRIDGING COURSE IN MATHEMATICS

DATE: 5 APRIL 2017   **TIME: 11.30 AM – 1.30 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. What is the mean for the following frequency distribution 10, 15,20,25,25?

    A. 47.5

    B. 20

    C. 19

    D. 95

2. If in a frequency the lowest value is 16 and the highest value is 96.What is the range?

    A. 5 to 29

    B. 15

    C. 80

    D. 1.5

3. What is the mean for the following frequency distribution 81, 75, 20, 65,55, 63, 96?

    A. 47.5

    B. 65

    C. 19

    D. 95

4. Which of the following divides a group of data into four subgroups?

    A. Median

    B. Quartiles

    C. Percentiles

    D. Arithmetic Mean

5. Which of the following is the least?

    A. 0.105

    B. 0.501

    C. 0.015

    D. 0.15

6. Find the HCF of the following: 72,96 and 144   6mks

7. Simplify and leave it in index form   6mks

a) $8^{100} \times (4 \times 2)^{50}$

c) Simplify $27^{2/3}$

8. solve for x in log x + log 5 = log 30   6mks

9. Use completing square method to solve $6x^2+34+20=0$ 4mks

10. Factorize 8ym-52t-8tm+56xyz   6mks

11. State 6 methods of presenting data   6mks

12. Prime factorize the following numbers 147 and 1626   6mks

SECTION B   [CHOOSE ANY THREE QUESTIONS]

1. The data below shows marks obtained by students in a mathematics exam:

Score	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Frequency	7	13	19	23	30	17	3

Using the information above calculate:

a) Mean   4mks

b) Mode   4mks

c) Median   4mks

d) Standard deviation   4mks

e) Variance   4mks

2. Work out the following

i) Factorize

a) 4mn-32f-8n+16fq   6mks

b) 32x-48+48=x+8+48   6mks

c) Solve for a and c   4mks

8a-4c=28

20a-12c=64   4mks

d) Simplify: jk (4j-6jk)-j (jk-j)   4mks

3 a) solve: i) $X^2+3X-54=0$ 4mks

           ii) $4X^2-12X +9$ 4mks

            iii) Factorize $6X^2-13+6$ 4mks

b) The square of a number is 4 more than three times the number. Find the number   4mks

c) A triangle ABC has a base of x+3 cm and a height of x cm. If the area is $5cm^2$, calculate the length of its base.   4mks

4. a) Evaluate log_2 32 without using tables or calculators   6mks

   b) given that log_{10} 3= 0.47771, log_{10} 2= 0.3010, simplify:

      I) log_{10} 1.5   4mks

      ii) log_{10} 54   4mks

   c) Express the following in index notation:

             log_5 625= 4   4mks

    d) Express 64 in index form   2mks.