

**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF MATHEMATICS AND ACTURIAL SCIENCES**

**UNIVERSITY EXAMINATION FOR CERTIFICATE IN BRIDGING IN MATHEMATICS**

**NAIROBI CITY CAMPUS**

**SEMESTER1 2016/2017**

**COURSE TITLE: BASIC ALGEBRA**

**COURSE CODE: SMA 0100**

**TIME 1 HOUR 30 MINUTES**

**EXAM VENUE: 9TH FLOOR**

**DATE: 13/12/2016**

**TIME: 2 HOURS**

**EXAM SESSION: 2:00PM – 4:00PM**

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**INSTRUCTIONS**

1. **Answer question ONE (compulsory) and ANY other TWO questions.**
2. **Candidates are advised not write on the question paper.**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**Question One**

1. Define the following terminologies
2. Algebraic expression (2 marks)
3. Quadratic expression (2 marks)
4. Factorization (2 marks)
5. indices (1mark)
6. rationalization of the denominator (3 marks)
7. Solve the equations:
8. (2 marks)
9. (4 marks)
10. Expand each of the following:
11. (3 marks)
12. (3 marks)
13. Factorize the following expression (3 marks)
14. Given that and. evaluate without using mathematical tables or calculators:
15. (2 marks)
16. (3 marks)

**Question Two**

1. Differentiate between a sequence and series (4 marks)
2. State two types of sequence (2 marks)
3. Find the 10th term in the sequence
4. (3 marks)
5. (3 marks)
6. Find the sum of the first 9 terms of the sequence given below
7. (4 marks)
8. (4 marks)

**Question Three**

1. The algebraic expression represent the perimeter of a rectanglr whose withth is 4 and length, . Complete the table below (4 marks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 5 | 6 | 7 | 10 | 15 |
|  | 18 |  |  |  |  |

1. Find , if each of the following is a perfect square.
2. Evaluate the following
3. (3 marks)
4. (5 marks)
5. Factorize each of the following:
6. (4 marks)
7. (4 marks)

**Question Four**

1. Simplify the following (5 marks)
2. Solve the following without using tables (5 marks)
3. Simplify each of the following
4. (2 marks)
5. (2 marks)
6. (3 marks)
7. (3 marks)