

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

**SCHOOL OF MATHEMATICS AND ACTURIAL SCIENCES**

**UNIVERSITY EXAMINATION FOR BRIDGING CERTIFICATE IN MATHEMATICS**

**NAIROBI CITY CAMPUS**

**SEMESTER1 2016/2017**

**COURSE TITLE:**

**COURSE CODE: SMA 0102**

**TIME 1 HOUR 30 MINUTES**

**EXAM VENUE: 9TH FLOOR**

**DATE: 13/12/2016**

**TIME 1 HOUR 30 MINUTES**

**EXAM SESSION: 11:30 AM – 1PM**

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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. Complimentary Angles (2 marks)
3. Supplementary angles (2 marks)
4. Vertically opposite angles (2 marks)
5. Regular polygon (2 marks)
6. Irregular polygon (2 marks)
7. Find the number of sides of:
8. A polygon having the sum of all interior angles 10800 (3 marks)
9. A regular polygon if each exterior angle is 24o (5 marks)
10. Without using a protractor, construct triangle PQR in which PQ=4.5cm, QR=6.5 cm and angle PQR=105o . Measure PR and angle PRQ. Construct a circumscribed circle opposite PRQ and Measure its radius (12 marks)

**Question Two**

1. Do not use a protractor or a set square in the this question
2. Draw a parallelogram PQRS with PQ= 4.3CM, QR=6.0 cm and angle PGR=60O  (5 marks)
3. Locate two points X and Y such that they are equidistance from lines PQ and PS and also 4cm from Q. measure XY (5 marks)
4. By shading, show the region that is less than 4cm from P and less than 5 cm from S (5 marks)
5. Explain using relevant examples the concept of trigonometry (5 marks)

**Question Three**

1. Without using mathematical tables or electronic calculators, and leaving your answers in surd forms where necessary, obtain:

Evaluate the following

1. (5 marks)
2. (5 marks)
3. (5 marks)
4. (5 marks)

**Question Four**

Brenda walks on a bearing of for 5 km then on a bearing of for 7km. calculate how far she is from her starting point and the bearing of her starting position from her final position (20 marks)