

**KABARAK UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**MAIN CAMPUS**

**SECOND SEMESTER,2021/ 2021 ACADEMIC YEAR**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION**

**MATH 121: CALCULUS 11**

**STREAM: Y1S2 TIME:**

**EXAMINATION SESSION: JAN-APRIL DATE:**

**INSTRUCTIONS TO CANDIDATES**

1. **Answer Question 1 and any other two questions in the answer booklet provided.**
2. **Do not write on your question papers. All rough work should be done in your answer booklet.**
3. **Clearly indicate which question you are answering.**
4. **Write neatly and legibly.**
5. **Edit your work for language and grammar errors.**
6. **Follow all the instructions in the answer booklet**

**SECTION A: (COMPULSORY) TOTAL MARKS FOR THIS SECTION IS 30**

**QUESTION ONE**

1. Determine [2Marks]
2. Evaluate [2Marks]
3. Evaluate [4Marks]
4. Use partial fractions to find [4Marks]
5. Determine the area enclosed by the curves y = sin x and y = cos x and the y-axis. [4Marks]
6. Evaluate the following definite integrals using the trapezoidal rule, giving the answers correct to 3 decimal places: [6Marks]
7. Evaluate [5Marks]
8. Determine the length of the parametric curve given by the following parametric equation [3Marks]

**QUESTION TWO**

1. Find [4Marks]
2. Evaluate the definite integrals using Simpson’s rule, giving the answers correct to 3 decimal places. [9Marks]
3. Find the surface area of the solid obtained by revolving the curve about x-axis [7Marks]

**QUESTION THREE**

1. Determine dx [4Marks]
2. Integrate with respect to x

[6Marks]

1. Evaluate the following definite integrals using the mid-ordinate rule, giving the answers correct to 3 decimal places. [10Marks]

**QUESTION FOUR**

1. Evaluate [5Marks]
2. The area enclosed by the curve , the x-axis and ordinates x = −1 and x = 3 is rotated 360◦ about the x-axis. Determine the volume generated [6Marks]
3. Determine the length between [5Marks]
4. Find [4Marks]

**QUESTION FIVE**

1. Find [7Marks]
2. Determine [6Marks]
3. Evaluate the integral [7Marks]