**King Saud University Math 111**

**Science and Medical Studies Section for girls 1st Term 1432-1433H**

**College of Science Final Exam**

**Department of Mathematics 3 Hours**

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| **Student’s Name:** | **Student ID.:** |
| **Group No.:** | **Lecturer's Name:** |
|  |
| **Question No.** | **I** | **II** | **III** | **IV**  | **V** | **Total** |
| **Mark** |  |  |  |  |  |  |
|  |
| **QUESTION I****A.** **Choose the correct answer :** |
| 1. equals |
| i. | ii. | iii. | iv.None of the previous |
| 2. is equal to |
| i. | ii.0 | iii. | iv.None of the previous |
| 3.The partial fractions of are |
| i. | ii. | iii.  | iv.None of the previous |
| 4. If  then  is |
| i. | ii.1 | iii. | iv.None of the previous |
| 5. The parametric equations   represents |
| i.An ellipse | ii.A circle | iii.A line | iv.None of the previous |
| 6. If  then  equals |
| i.0 | ii. | iii. | iv.None of the previous |
| 7.For the polar coordinates  the rectangular coordinates  are |
| i. | ii. | iii. | iv.None of the previous |
| 8. For the rectangular coordinates  the polar coordinates  are |
| i.  | ii  | iii.  | iv.None of the previous |
| 9.The graph of the rose  has |
| i.5 leaves | ii.4 leaves | iii.8 leaves | iv.None of the previous |
| 10.  where , is |
| i.  | ii.  | iii.  | iv.None of the previous |
| **B. Prove that for any positive real numbers**    |
| **QUESTION II** **Determine whether the following improper integrals converge or diverge**1.
 |
| 1.
 |
| **QUESTION III****Evaluate the following integrals** |
| **1.**  |
| **2.** **3.**  |
| 4.  |
| **QUESTION IV**1. *Sketch* and *Find*  *the area* of the region bounded by the graphs of and
 |
| 1. Let R be the region bounded by , axis and the line . *Sketch R*  and *set up the integral for the volume* of the solid resulting by revolving R about
2. The axis
3. The axis.
4. Find the arc length of  on
 |
| **QUESTION IV**1. *Sketch* and *find the area* of the region  for.
 |
| 1. Find the polar equation corresponding to the rectangular equation
 |

Good Luck