**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** | | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| **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