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| **Student’s Name** | **Student’s ID** | **Group Number** | **Lecturer’s Name** |
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| **Question Number** | **I** | **II** | **III** | **IV** | **V** | **Total** |
| **Mark** |  |  |  |  |  |  |

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| **Question I A. Choose the correct answer**   1. **equals** 2. **c)** 3. **d) None of the previous** |
| 1. **The integral ( equals** 2. **1 c)** 3. **d) None of the previous** |
| 1. **The rectangular coordinates corresponding to the polar coordinates are** 2. **( -5,0) c) (5,0)** 3. **( 0, -5) d) None of the previous** 4. **A polar coordinate representation of the rectangular point**  **is** 5. **c)** 6. **d) None of the previous** 7. **The plane curve defined by is**   **a) a circle c) an ellipse**  **b) half a circle d) None of the previous**   1. **is equal to**   **a) 5/3 c) 10/3**  **b) 4/3 d) None of the previous**   1. **is equal to**   **a) c)**  **b) d) None of the previous**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **B. Find a polar equation corresponding to the rectangular equation ,**  **Question II**   1. ***Sketch* and *find the area* of the region bounded by the graphs of and**   **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **B. *Sketch* and *find the area* of the region bounded by the graph of for**  **Question III**  **A. Find the volume of the solid formed by revolving the region bounded by the graphs of**  **, and**  **i) about the -axis ii) about the -axis**  **B. Find the arc length of from to**  **Question IV A. Determine whether the following integral converges or diverges**  **B. If show that**  **Question V A. Evaluate the following integrals**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **B. (1) Use Integration by parts to show that**  **(2) Use the above formula to compute**  **Good Luck ☺** |
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