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| **Question Number** | **I** | **II** | **III** | **Total** |
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| ***Question I:* [4 Marks]****A. If , where and** **(i)Show that****(ii) Find**  |
| **B. Find if is determined implicitly by the equation**  |
| ***Question II:*[8 Marks]****A. Find the extrema of on the triangular region bounded by the lines and** **B. Use Lagarange Multipliers to find the extrema of subject to the constraint**  |
| **C. Determine whether the following sequences converge or diverge****(i)** **(i)**  |
| ***Question III:*[8 Marks]****A. Evaluate****B. Use the polar coordinates to evaluate** **C. Use double integral to find the volume of the solid in the first octant bounded by the coordinate planes, the cylinder and the plane**  |
| **D. Use triple integral to represent the volume of the region bounded by the graphs of** **and**  |

Good Luck☺