|  |  |  |
| --- | --- | --- |
| **1.** |  | Answer any **FIVE** of the followings: [**5×2=10**] |
|  | **a.** | Evaluate . |
|  | **b.** | Form the iterated integral: |
|  | **c.** | Evaluate . |
|  | **d.** | Form the double integral, over the triangular region R enclosed by |
|  | **e.** | Solve the DE using separation of variables. |
|  | **f.** | Write down the complementary function whose auxiliary roots are given as |
|  | **g.** | Find the particular integral for the given DE . |
| **2.** |  | Answer any **ONE** of the followings:  **6** |
|  | **a.** | Evaluate , where D is the region bounded by the curves |
|  | **b.** | Evaluate by changing to polar coordinates, where is the region ………….. |
| **3.** |  | Answer any **ONE** of the followings: **6** |
|  | **a.** | Find the center of mass of a lamina occupied by the \*\*\*\*\*\* having density function **.** |
|  | **b.** | Find the volume of a tetrahedron enclosed by the coordinate planes and the plane …… |
| **4.** |  | Answer any **ONE** of the followings: **6** |
|  | **a.** | Solve the first order linear DE |
|  | **b.** | Solve the system of DE |
| **5** |  | Answer any **TWO** of the followings: [**2×6=12**] |
|  | **a.** | Solve the initial value problem . |
|  | **b.** | Solve the DE using method of undetermined coefficients. |
|  | **c.** | Solve the DE using method of undetermined coefficients. |
|  | **d.** | Solve the DE using method of undetermined coefficients |