



# SYMBIOSIS SKILLS AND OPEN UNIVERSITY

(Established under Govt. of Maharashtra Act No. XXXVII 2017 dated 3rd May 2017)

Kiwale, Adjoining Mumbai - Pune Express Highway, Pune 412 101

State - Maharashtra, INDIA. | <http://www.ssou.ac.in>

**Programme:** B. Tech.

**Class:** F.E.

**A.Y.:** 2017-18

**Semester:** II

**Subject:** Applied Mathematics II (Skills)

**Date:** 05/03/2018

## SKILL ACTIVITY 3

### WRITE COMMANDS FOR FOLLOWING USING MATLAB

**Q1. Evaluate following double integrals (Any 5 from 1 to 15, any 7 from 16 to 30)**

1.  $\int_1^2 \int_0^4 2xy \, dy \, dx$
2.  $\int_0^2 \int_{-1}^1 (x - y) \, dy \, dx$
3.  $\int_{-1}^0 \int_{-1}^1 (x + y + 1) \, dx \, dy$
4.  $\int_0^1 \int_0^1 \left(1 - \frac{x^2 + y^2}{2}\right) \, dx \, dy$
5.  $\int_0^3 \int_0^2 (4 - y^2) \, dy \, dx$
6.  $\int_0^3 \int_{-2}^0 (x^2 y - 2xy) \, dy \, dx$
7.  $\int_0^1 \int_0^1 \left(\frac{y}{1+xy}\right) \, dx \, dy$
8.  $\int_1^4 \int_0^4 \left(\frac{x}{2} + \sqrt{y}\right) \, dx \, dy$
9.  $\int_0^{\ln 2} \int_1^{\ln 5} e^{2x+y} \, dy \, dx$
10.  $\int_0^1 \int_1^2 xye^x \, dy \, dx$
11.  $\int_{-1}^2 \int_0^{\pi/2} y \sin x \, dx \, dy$
12.  $\int_{\pi}^{2\pi} \int_0^{\pi} (\sin x + \cos y) \, dx \, dy$
13.  $\int_1^4 \int_1^e \frac{\ln x}{xy} \, dx \, dy$
14.  $\int_{-1}^2 \int_1^2 x \ln y \, dy \, dx$
15.  $\int_0^1 \int_0^2 \frac{y-x}{(x+y)^3} \, dx \, dy$
16.  $\int_0^2 \int_0^1 \frac{y-x}{(x+y)^3} \, dy \, dx$
17.  $\int_0^1 \int_{2y}^4 e^{x^2} \, dx \, dy$



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18.  $\int_0^3 \int_{x^2}^9 x \cos(y)^2 dy dx$
19.  $\int_0^2 \int_{y^3}^{4\sqrt{2y}} (x^2y - xy^2) dx dy$
20.  $\int_0^2 \int_0^{4-y^2} e^{xy} dx dy$
21.  $\int_1^2 \int_0^{x^2} \frac{1}{x+y} dy dx$
22.  $\int_1^2 \int_{y^3}^8 \frac{1}{\sqrt{x^2+y^2}} dx dy$
23.  $\iint_R (6y^2 - 2x) dA, R : 0 \leq x \leq 1, 0 \leq y \leq 2$
24.  $\iint_R \left(\frac{\sqrt{x}}{y^2}\right) dA, R : 0 \leq x \leq 4, 1 \leq y \leq 2$
25.  $\iint_R xy \cos y dA, R : -1 \leq x \leq 1, 0 \leq y \leq \pi$
26.  $\iint_R y \sin(x+y) dA, R : -\pi \leq x \leq 0, 0 \leq y \leq \pi$
27.  $\iint_R e^{x-y} dA, R : 0 \leq x \leq \ln 2, 0 \leq y \leq \ln 2$
28.  $\iint_R xye^{xy^2} dA, R : 0 \leq x \leq 2, 0 \leq y \leq 1$
29.  $\iint_R \frac{xy^3}{x^2+1} dA, R : 0 \leq x \leq 1, 0 \leq y \leq 2$
30.  $\iint_R \frac{y}{x^2y^2+1} dA, R : 0 \leq x \leq 1, 0 \leq y \leq 1$