King Fahd University of Petroleum and Minerals
Department of Math & Stat
Math 201 (082)
Quiz 4 (a)
Time: 45 Minutes **Marks _____/45**

Name: _____ Section #: _____

ID #: _____ Serial #: _____

1. The value of $\int_0^1 \int_0^{\sqrt{1-y^2}} \cos(x^2+y^2)\,dx\,dy$ is

   (a) $\frac{2}{\pi}$

   ✓(b) $\frac{\pi}{4}\sin(1)$

   (c) $\frac{\pi}{4}(1-\cos(1))$

   (d) 3

   (e) $1-\frac{\pi}{4}$

2. The volume of the solid bounded by the paraboloid $z = 9 - x^2 - y^2$ and the plane $z = 5$ is

   (a) 4

   (b) 2π

   (c) 1

   ✓(d) 8π

   (e) $\frac{\pi}{2}$

3. The value of $\int_1^2 \int_z^2 \int_0^{\sqrt{3}y} \frac{y}{x^2+y^2} dx\, dy\, dz$ is

(a) 2π

(b) 3

(c) $2\pi - 1$

(d) $\frac{\pi}{4}$

✓(e) $\frac{\pi}{6}$

4. Using iterated integrals, volume of the sphere $x^2 + y^2 + z^2 = a^2$ $(a > 0)$ is

(a) πa^3

(b) $2\pi a^2$

✓(c) $\frac{4\pi}{3} a^3$

(d) $\frac{2\pi}{a}$

(e) $\frac{3}{4} \pi a^3$

5. The value of $\int_{-2}^{2} \int_{-\sqrt{4-x^2}}^{\sqrt{4-x^2}} \int_{0}^{\sqrt{4-x^2-y^2}} z^2 \sqrt{x^2+y^2+z^2}\, dz\, dy\, dx$ is

(a) $\frac{64\pi}{9}$

(b) $2\pi + \sqrt{3}$

(c) $2\pi + 1$

(d) $\frac{\pi}{3}$

(e) 9π