



**Mid 2-- Math 211- Semester 1 - 1447 H**

**Time: 1h 30 min - Marks: 25**

**Question 1: (2+2 marks)**

Compute the following integrals:

$$i) \int_0^1 \left( \frac{1}{\sqrt[3]{x}} + 3x \right) dx \quad , \quad ii) \int_1^2 \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$$

**Question 2: ( 2+2+3+4+2 Marks)**

Evaluate the following indefinite integrals:

$$i) \int \frac{3x^2+2}{(3x^3+6x+1)^5} dx \quad , \quad ii) \int x^2 \sqrt[3]{2x^3+2} dx \quad , \quad iii) \int x \cos(2x) dx$$

$$iv) \int \frac{x+5}{x^2-3x+2} dx \quad , \quad V) \int \frac{x^2}{x^2+4} dx$$

**Question 3: (4 Marks)**

Find the area of the region bounded by the graphs of:

$$y = \sqrt{x} \quad , \quad y = x^2$$

**Question 4: (4 Marks)**

Find the volume of the solid of revolution generated by revolving the region bounded by the graphs of:

$$y = x^2 \quad , \quad y = 2 - x^2 \quad \text{about the } x - \text{axis}$$