MM 32 **Applications of the Integrals** **Time 1 hour**

Section A 1 Marks Each

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1. Find the area bounded by the curve, x axis and the lines x = 0 and x = 4.

2. On sketching the graph of y = $|\mathbf{x}-2|$ and evaluating $\int_{-1}^{3}|\mathbf{x}-2|$ dx, what does $\int_{-1}^{3}|\mathbf{x}-2|$dx represent on the graph?

Section B 6 Marks Each

3. Find the area bounded by the curve y=x sin x^2, x axis and between x=0 and x=$\sqrt{\frac{\pi}{2}}$.

4. Draw the rough sketch of y = sin 2x and determine the area enclosed by the curve, x axis and the lines x=$\frac{\pi}{4}$ and x=$\frac{3\pi}{4}$.

5. Sketch the region bounded by the curve y = $\sqrt{5-\mathbf{x}^2}$ and y = $|\mathbf{x}-1|$ and find its area.

7. Using integration, find the area of the region bounded by the curves y = $\mathbf{x}^2+2$, y = x, x = 0 and x = 3.

8. Find the area of the region bounded by the parabola y^2 = 4x and the line y = 2x.