



# ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY

## DEPARTMENT OF MATHEMATICS

### APPLIED MATHEMATICS

For freshman engineering regular students

DATE: Dec 22, 2021

APPLIED MATHEMATICS-I

TEST- II | 10% |

TIME ALLOWED: 45 MINUTES

NAME: \_\_\_\_\_ IDNO: \_\_\_\_\_ Section: \_\_\_\_\_

Part-I Short answer | 1.5 pts each |

1. If  $\int_4^{10} f(x)dx = 4.6$  and  $\int_1^{10} f(x)dx = 12.5$  then  $\int_1^4 f(x)dx =$  \_\_\_\_\_

2. Evaluate:  $\int_{-2}^3 \frac{1}{x^3} dx =$  \_\_\_\_\_

3.  $\int \frac{10-3x}{x^2-4} dx =$  \_\_\_\_\_

4. If  $F(x) = \int_0^{x^6} e^{t^2} dt$ , then  $F'(x) =$  \_\_\_\_\_

Part-II Work out

Solve the following questions with the necessary steps clearly. [2 pts each]

1. Find the area of the region enclosed by the parabolas  $y = x^2$  and  $y = 2x - x^2$

2. Evaluate:  $\int \sqrt{4x - x^2} dx$