

Name:	Roll Number:

Quiz 01 (Set A)  
SIAS, Krea University (AY 2025-26)  
Mathematical Methods for Economics (Course Code: ECON211)  
25 July 2025

Maximum Points: 10Duration: 30 minutes

Dear students,  
**Instructions and Advice:**

- This is a closed book quiz.
- This quiz accounts for 10% of your grades.
- You need to answer 8 questions in all.
- All questions are compulsory. Points for each question are mentioned in parentheses.
- Please select only one choice for the multiple choice questions.
- At no point during the exam, you are allowed to ask clarificatory questions. Make reasonable assumptions if you have doubts and proceed to answer the question.
- You are not permitted to use any electronic device including calculators.
- There is plenty of time. Use it wisely, do not rush.
- All the best!

## Multiple Choice Questions

1. (1 point) Consider the following statements:

**Statement (i):**

$$(a^r)(a^s) = a^{rs}$$

**Statement (ii):**

$$(a^r)^s = a^{r+s}$$

- A. Both (i) and (ii) are correct.
- B. Statement (i) is correct but statement (ii) is wrong.
- C. Statement (i) is wrong but statement (ii) is correct.
- D. Both (i) and (ii) are wrong.

**Answer:** \_\_\_\_\_

2. (1 point) If  $x^{-2}y^3 = 5$ , compute  $x^2y^{-3} + 2x^{-10}y^{15}$ .

- A. 1250.2
- B. 3125.2
- C. 6250
- D. 6250.2

**Answer:** \_\_\_\_\_

3. (1 point) There are two sets  $A$  and  $B$ .

$$A = \{x : x \text{ is a prime number}\}$$

$$B = \{x : x \text{ is an even number}\}$$

The universal set is  $\mathbb{U} = \{x : 0 \leq x \leq 20\}$ .

What is  $A \cap B^c$ ?

- A.  $\{3, 5, 7, 9, 11\}$
- B.  $\{2, 3, 5, 6, 9, 11\}$
- C.  $\emptyset$
- D.  $\{3, 5, 7, 11, 13, 17, 19\}$

**Answer:** \_\_\_\_\_

### Short Answer Questions-I

4. (1 point) The shortest side of a triangle is given by  $x$  cm. The longest side and the third side are given by  $3x$  cm and  $3x - 2$  cm respectively. What is the minimum value of  $x$  to have the perimeter greater than or equal to 61 cm?

5. (1 point) Simplify the following expression:  $p^2 - q^2 + (p - q)$

6. (1 point) Solve for  $x$ :  $|5 - 3x| \leq 4$ .

## Short Answer Questions-II

7. (2 points) Solve for  $x$ .

$$\frac{(x-2)+3(x+1)}{x+3} \leq 0$$

8. (2 points) In a survey of 25 students, it was found that 15 had taken Mathematics, 12 had taken Physics and 11 had taken Chemistry, 5 had taken Mathematics and Chemistry, 9 had taken Mathematics and Physics, 4 had taken Physics and Chemistry and 3 had taken all the three subjects. Find the number of students that had none of the subjects.

