

Name:	Roll Number:

Quiz 01 (Set B)  
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) If  $x^{-2}y^3 = 5$ , compute  $\frac{1}{100}(x^2y^{-3} + 2x^{-10}y^{15})$ .
- A. 1250.2
  - B. 62.5
  - C. 6.25
  - D. 6250.2

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

2. (1 point) Consider the following statements:

**Statement (i):** If we take the quotient of two exponentials with the same base, we simply subtract the exponents:

$$\frac{x^a}{x^b} = x^{a-b}$$

**Statement (ii):** This property (provided in Statement (i)) does not hold good when  $b$  is greater than  $a$ .

- 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: \_\_\_\_\_

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

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

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

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

What is  $B \cap A^c$ ?

- A.  $\{1, 7, 11, 19\}$
- B.  $\{1, 9, 15\}$
- C.  $\emptyset$
- D.  $\{9, 15\}$

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  $4x$  cm and  $4x - 2$  cm respectively. What is the minimum value of  $x$  to have the perimeter greater than or equal to 79 cm?

5. (1 point) Simplify the following expression:  $u^3 + v^3 - u^2v - v^2u$ .

6. (1 point) Solve for  $x$ :  $|7 - 3x| \leq 11$ .

## Short Answer Questions-II

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

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

8. (2 points) In a survey of 35 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.

