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| Name: | Roll Number: |
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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.

