

# Correction of the Exam



## Technical English –L1 Mathematics Students Exam

Instructions: ○ Circle the correct answer letter

### Section 1: Core Mathematical Concepts

1. A mathematical statement that is proven true based on axioms and definitions is called a:
  - a) Variable
  - b) Lemma
  - c) Theorem
  - d) Function
2. Which term refers to basic assumptions or starting points in a mathematical system?
  - a) Axioms
  - b) Corollaries
  - c) Propositions
  - d) Variables
3. A "Corollary" is best described as:
  - a) A statement that has not yet been proven
  - b) A symbol representing an unknown quantity
  - c) A direct result or extension of a theorem
  - d) The starting point of all mathematical truths

### Section 2: Symbols and Set Theory

6. What does the symbol  $\in$  represent?
  - a) Subset
  - b) Intersection
  - c) Element of
  - d) Union
7. The symbol  $\cap$  refers to the "Intersection" of two sets, which means:
  - a) Elements in either set A or B or both
  - b) Elements in set A but not in B
  - c) Elements in both sets A and B
  - d) Elements not in A
8. Which symbol represents the set of all Integers?
  - a)  $\mathbb{N}$
  - b)  $\mathbb{Z}$

- c)  $\mathbb{Q}$
- d)  $\mathbb{R}$

9. In set theory, what are "Disjoint Sets"?

- a) Sets where every element of A is in B
- b) Sets with no elements in common ( $A \cap B = \emptyset$ )
- c) The set of all real numbers
- d) A collection of complex numbers

10. Is "Infinity ( $\infty$ )" considered a real number according to the text?

- a) True
- b) False

### Section 3: Logic and Operations

11. The logical operator " $\Rightarrow$ " (Implies) means:

- a) P if and only if q
- b) Both statements must be true
- c) If p then q
- d) The negation of p

12. The absolute value  $|x|$  represents:

- a) The square root of x
- b) The distance of x from 0 on the number line
- c) x multiplied by itself
- d) A number that can only be divided by 1 and itself

### Section 4: Grammar and Language

13. Which tense is used for general truths or scientific facts?

- a) Future Simple
- b) Past Simple
- c) Present Simple
- d) Present Continuous

14. Which sentence about geometry is correct?

- a) A square be a rectangle.
- b) A square am a rectangle.
- c) A square is a rectangle.
- d) A square are a rectangle

16. Complete the question regarding a variable: "\_\_\_\_\_ the variable "x" represent a prime number?"

- ☐ a) Does
- ☐ b) Is
- ☐ c) Are
- ☐ d) Do

17. What is the correct form of the verb "to have" in this context?

"An equilateral triangle \_\_\_\_\_ three equal sides."

- ☐ a) haves
- ☐ b) have
- ☒ c) has
- ☐ d) is having

19. Fill in the blank with the correct form of "to be":

"The coordinates (x, y) \_\_\_\_\_ essential for graphing."

- ☐ a) is
- ☐ b) am
- ☐ c) be
- ☒ d) are

20. Choose the correct negative sentence for an algebraic rule:

- ☐ a) Negative numbers not have square roots in the real number system.
- ☒ b) Negative numbers don't have square roots in the real number system.
- ☐ c) Negative numbers doesn't have square roots in the real number system.
- ☐ d) Negative numbers is not have square roots in the real number system.

21. Complete the sentence about a mathematical constant:

"The value of  $\pi$  (pi) \_\_\_\_\_ approximately 3.14."

- ☐ a) are
- ☒ b) is
- ☐ c) am
- ☐ d) be

22. Which question about a function is correct?

- a) Where do the graph intersect the axis?
- b) Where does the graph intersects the axis?
- ☒ c) Where does the graph intersect the axis?
- d) Where is the graph intersect the axis?

21. Select the correct form for the verb "to do" in a proof:

"The calculation \_\_\_\_\_ not require a calculator."

- ☐ a) do
- ☒ b) does
- ☐ c) doing
- ☐ d) is

22. What is the English translation for "القيمة العظمى"?

- ☐ a) Minimum
- ☒ b) Maximum
- ☐ c) Supremum
- ☐ d) Infimum

23. How do you say "محدودة من السفلى" in English?

- ☐ a) Bounded above
- ☒ b) Bounded below
- ☐ c) Bounded subset
- ☐ a) Lower-bound

24. Which term translates to "عنصر حيادي"?

- ☐ a) Property
- ☐ b) Transitivity
- ☒ c) Identity element
- ☐ d) Particular case

25. The phrase "برهان باستعمال العكس النقيض" means:

- ☐ a) Proof by recurrence
- ☐ b) Proof by cases
- ☒ c) Proof by contrapositive
- ☐ d) Direct proof

26. "ان نفرض" is translated as:

- ☐ a) To define
- ☒ b) We assume that
- ☐ c) It is a property
- ☐ d) Particular case

Good Luck

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