

Created At:

2025-06-28 11:02

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## PRACTA Beta Exam

### General Knowledge and Reasoning

ID: EXAM-BETA-001

**Question 1:** A function  $f(x) = 2x^2 - 8x + k$  has its minimum at  $x = 2$ . Which value of  $k$  makes  $f(x) = 0$  have two distinct real roots?

- ☐ A  $k < 0$
- ☐ B  $k < 8$
- ☐ C  $k = 0$
- ☐ D  $k < 8$
- ☐ E  $k < 8$

**Question 2:** In a group, there are four friends: Ana, Bruno, Clara, and Daniel. It is known that: - If Ana goes to the movies, then Bruno goes too. - If Bruno doesn't go, then Clara goes. - Daniel goes only if Clara goes. If Ana does not go to the movies, who certainly goes?

- ☐ A Bruno
- ☐ B Clara
- ☐ C Daniel
- ☐ D Ana
- ☐ E Nobody

**Question 3:** An object is launched vertically upwards with an initial speed of 20 m/s. The local gravity is 10 m/s<sup>2</sup>. What is the maximum height reached?

- ☐ A 10 m
- ☐ B 20 m
- ☐ C 30 m
- ☐ D 40 m
- ☐ E 50 m

**Question 4:** Read the excerpt: "Technology never sleeps, but should we?" Which option best expresses the main theme?

- ☐ A The need to switch off electronic devices.
- ☐ B The impact of technology on human sleep.
- ☐ C The constant evolution of science.
- ☐ D The link between electricity and productivity.
- ☐ E The rise of artificial intelligence.

**Question 5:** Choose the option that best completes the sentence: "If I \_\_\_\_ more time, I would travel around the world."

- ☐ A has
- ☐ B have
- ☐ C had
- ☐ D will have
- ☐ E having

**Question 6:** What is the sum of all integers from 1 to 100 inclusive?

- ☐ A 5050
- ☐ B 5000
- ☐ C 4950
- ☐ D 5150
- ☐ E 5500

**Question 7:** A car accelerates from 10 m/s to 30 m/s in 4 seconds. What is the average acceleration?

- ☐ A 4 m/s<sup>2</sup>
- ☐ B 5 m/s<sup>2</sup>
- ☐ C 6 m/s<sup>2</sup>
- ☐ D 7 m/s<sup>2</sup>
- ☐ E 8 m/s<sup>2</sup>

**Question 8:** All PRACTA students love challenges. Matheus is a PRACTA student. Therefore:

- ☐ A Matheus doesn't like challenges.
- ☐ B Matheus might like challenges.
- ☐ C Matheus likes challenges.
- ☐ D Matheus hates challenges.
- ☐ E Nothing can be concluded.

**Question 9:** Which of these elements is liquid at room temperature?

- ☐ A Iron
- ☐ B Mercury
- ☐ C Aluminum
- ☐ D Zinc
- ☐ E Copper

**Question 10:** What is the main goal of the annual COP conferences organized by the UN?

- ☐ A Discuss global economy
- ☐ B Debate human rights
- ☐ C Promote peace agreements
- ☐ D Negotiate actions against climate change
- ☐ E Regulate international trade

## Answer Sheet

1. ☐ A ☐ B ☐ C ☐ D ☐ E
2. ☐ A ☐ B ☐ C ☐ D ☐ E
3. ☐ A ☐ B ☐ C ☐ D ☐ E
4. ☐ A ☐ B ☐ C ☐ D ☐ E
5. ☐ A ☐ B ☐ C ☐ D ☐ E
6. ☐ A ☐ B ☐ C ☐ D ☐ E
7. ☐ A ☐ B ☐ C ☐ D ☐ E
8. ☐ A ☐ B ☐ C ☐ D ☐ E
9. ☐ A ☐ B ☐ C ☐ D ☐ E
10. ☐ A ☐ B ☐ C ☐ D ☐ E