Question 8. The premises of a syllogism are: A dog is a mammal. A mammal is warm-blooded. Which of the following conclusions would be valid?

- A dog is warm-blooded
- A mammal is a dog
- A dog is an animal
- A mammal is warm-blooded

Question 9. The number of digits in the number formed by concatenating the first n natural numbers is given by a function f(n). Find the value of f(5).

- 11
- 12
- 13
- 14

Question 10. If two resistors of 5 ohms and 10 ohms are connected in parallel, the equivalent resistance is ______ ohms.

- 3
- 1
- 2
- 25

Question 11. The inverse of a matrix A is given by A⁻¹. If A is a 2x2 matrix with elements a, b, c, d, which of the following is the correct formula for A⁻¹?

- (d/c - b/c, -d/b - a/b)
- (c/d - a/d, -c/a - d/a)
- (c/d - b/d, -c/b - d/b)
- (d/c - b/c, -d/a - a/b)