Question 1: The method of loop invariants is used to prove _____ of a loop with respect to certain pre and post-conditions.

- falseness
- ✓ correctness

Question 2: Let X = {2, 4, 5} and Y= {1, 2, 4} and R be a relation from X to Y defined by R = {(2,4), (4,1), (a,2)}. For what value of 'a' the relation R is a function ?

- 1
- 2
- 4
- ✓ 5

Question 3: If p is false and q is true, then ~p ↔ q is _____.

- ✓ TRUE
- FALSE

Question 4: Let X = {1, 2, 3}, then 2-combinations of the 3 elements of the set X are _____?

- ✓ {1, 2}, {1, 3} and {2, 3}
- {1, 2}, {2, 1}, {1, 3}, {3, 1}, {2, 3}, and {3, 2}
- {1, 2}, {2, 1}, {1, 3} and {2, 3}
- {1, 2}, {2, 1},{1, 3} and {3, 1}

Question 5: Let f is defined recursively by
F(0)=3
F(n+1)=2f(n)+2
Then f(2)=

- 8
- 10
- ✓ 18
- 21

Question 6: Let f and g be the functions defined by f(x)= 2x+3 g(x)= 3x+2 then composition of f and g is

- 6x+6
- 5x+5
- ✓ 6x+7
- None of the given options