Dual of a Space MCQ Questions

Q1. The dual of a Cube is an Octahedron but the dual of an Octahedron is not  
 a Cube. True/False

Q2. Which of the following is true?

1. The dual of a vector space is also a vector space called Dual space
2. A dual space is a set of all the functions that takes the elements of the   
   vector space V and gives out an element of the field over which V is defined.
3. The dual of a vector space need not be a vector space
4. c and d are correct
5. a and b are correct

Q3. Let A ⊆ S be a subset, then the complement Ac will be the dual of the   
 subset A. True/False

Q4. If B = { v1, v2, . . . . , vn} is the basis of the vector space V and,  
 B\* = {T1, T2, . . . . . . , Tn} is the basis of the dual of the vector space V, then

1. T1(v2) = 1
2. T1(v2) = 0
3. T3(v3) = 1
4. Both b and c are correct
5. None of the above options are correct

Q5. If B = { v1, v2, . . . . , vn} is the basis of the vector space V and,  
 B\* = {T1, T2, . . . . . . , Tn} is the basis of the dual of the vector space V, then  
 Ti(vj) = 𝛿ij, where 𝛿ij is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_

ANSWER KEY

Q1. False

Q2. a and b are correct

Q3. True

Q4. Both b and c are correct

Q5. Kronecker’s Delta