Quiz 6

(20 points)

Name: 
Course No: CSCE101

1. (3 points) For each of the following ways to classify networks, give an example of one of the classifications.
   (a) Example: Transmission Media – Copper wire, Optical Fiber, Wireless

   (b) Size –

   (c) Topology –

   (d) Communication Model –

2. (3 points) For each of the network layers (Application, Transport, Network, Link), answer the following question:
   • This layer routes packets to the correct location:

   • The HTTP protocol is used by this layer:

   • This layer uses the CSMA/CD or Token Ring protocol:

3. (2 points) Name two ways in which an algorithm can be represented.
   (a)

   (b)
4. (1 points) What pseudocode construct is used to choose between two alternatives?

5. (1 points) In your own words, give a simple definition of an algorithm.

6. (4) Write a function called PRODUCT_LIST that takes as input a list (call it X) and two integers (called low and high), and returns the product of all list elements from X[low]... X[high]. For example, given the list Q = {2, 4, 9, 2, 12, 4}, the function call PRODUCT_LIST(Q, 0, 3) returns 144 (the product of 2 × 4 × 9 × 2).
7. (6 points) Given the following items:

\[ X = \{ 12, 43, 2, 5, 16, 27 \} \]
\[ Y = \{ 23, 17, 1, 9, 5, 8 \} \]

(a) Write a routine called \texttt{SWAP} that will allow the calling function (you) to switch elements between the lists \( X \) and \( Y \). \textit{(Hint: This will need 4 inputs: Two lists and two indices.)}

(b) In the following function, use your routine to place all numbers less than 10 into array \( Y \), and all numbers greater than 10 into \( X \).

\[
\texttt{STUDENT_SWAP(X, Y) \{ }
\]
\[
\quad // X, Y are lists as defined above.
\]
\[
\}
\]