Web Sample Test

Multiple Choice Answers and Explanations

Questions 1 – 10

The HSC Assistant: SDD

1   A   Initially Count=5 and Result=0, then just after the :
- first iteration Count=7 and Result=7-0-1=6
- second iteration Count=9 and Result=9-6-1=2
- third iteration Count=11 and Result=11-2-1=8
- fourth iteration Count=13 and Result=13-8-1=4As 13-4=9 and 9>8 the loop completes.

2   D   X takes any of the 6 values from 0 to 5. Y takes any of the 6 values from 5 down to 0. 6 times is 36 elements in the array. There could be more elements but there cannot be less, as each of these 36 elements is accessed during the algorithm's execution. Note that Y is initially 6 but it is decremented to 5 prior to its first use as an index for the NumberArray.

3   D   Commencing from the right, firstly 8 is considered the sorted part of the array.
Pass 1: Consider the 7, it is in the correct position, so 7 8 is the sorted part.
Pass 2: Consider the 13, insert it to the right of the 8, so 7 8 13 is the sorted part.
Pass 3: Consider the 2, it is in the correct position, so 2 7 8 13 is the sorted part.
Hence an insertion sort was used.

4   A   The identifier CheckCustome is the name of the routine and is also a variable returns true or false. Therefore CheckCustomer must be a function as it returns a value via its name.

5   D   Device has 2 dimensions that are both of type Domain. A Domain is an int from 0 to 5, that is 6 elements. 6 times 6 is 36 so Device has 36 elements. Device is of type DeviceType and DeviceType was defined with three different data types, hence DeviceType is a record. Therefore Device is a 2 dimensional array of 36 records.

6   C   Structure diagrams contain the main program at the top with hierarchical branches to each lower level subroutine. This is repeated for each lower level. This is precisely the top-down design of the program.

7   A   The offcie staff type in the incorrect Client Name into the Find Client ID process. This process sends a Client ID to the Generate Statement process. It is most likely that the highest Client ID is being produced in error by the Find Client ID process when it cannot find the entered Client Name.

8   D   The diamond indicates a choice between two calls. Note that Store Customer Data calls Store Customer and Store Customer Address repeatedly.

9   B   On DFDs squares denote external entities, circles denote processes, open rectangles denote data stores and connecting lines show data movements and are known as dataflows.

10   D   RealNum is divided by two prior to the Print statement, as RealNum is initially 20 then the answer must commence with 10. The last RealNum to be printed will be less than 1 as the post-test loop then ends.