4 Study the algorithm:

```
DECLARE Chars : ARRAY[1:4] OF CHAR
DECLARE I, J : INTEGER
DECLARE Key : CHAR
I ← 2
Chars[1] ← 'D'
Chars[2] ← 'T'
Chars[3] ← 'H'
Chars[4] ← 'R'
WHILE I <= 4                              //Outer loop
   Key ← Chars[I]
   J ← I - 1
   WHILE J >= 0 AND Chars[J] > Key        //Inner loop
      Chars[J + 1] ← Chars[J]
      J ← J - 1
   ENDWHILE
   Chars[J + 1] ← Key
   I ← I + 1
ENDWHILE
```

(a) The outer loop structure used in the algorithm is **not** the most appropriate one to use.

State the type of loop structure that would be the most appropriate to use and justify why it is the most appropriate.

Loop structure .....

Justification .....

.....

[2]

(b) Complete the trace table by dry running the algorithm.

The first row has been completed.

I	Key	J	Chars[J]	Chars			
				[1]	[2]	[3]	[4]
2				'D'	'T'	'H'	'R'

[6]