**Homework 2: Top-down design**

1. 1. Explain **three** reasons why programmers use functions. [6]

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2. The following is a function written in pseudocode:

 FUNCTION findmax(s)

 length 🡨 len(s)

 maxvalue 🡨 s[1]

 FOR n = 1 TO length

 IF s[n] > maxvalue

 maxvalue 🡨 s[n]

 ENDIF

 NEXT n

 RETURN maxvalue

 ENDFUNCTION

(a) Write a pseudocode statement to use this function to find the maximum value in an array **NumberOfViewers** and assign the result to a variable called **result**. [1]

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(b) Give the name of a **parameter** used by this function. [1]

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(c) State the data type of **s**. [1]

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(d) Give an example from the function of

 (i) an assignment statement [1]

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 (ii) iteration [1]

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 (iii) selection [1]

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(e) Name a built-in function used in the given pseudocode. [1]

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(f) State what the built-in function does. [1]

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3. Write pseudocode for a program which asks the user to enter their favourite colour. It then calls a function which accepts the colour as a parameter and prints out a suitable comment. Test for at least 3 colours. If the colour is not one of these three, print a different comment, e.g. “OK!” [6]

[Total 20 marks]