

Revision Sheet

A-Level Computer Science · Unit 11 Programming

9 vocabulary items · 41 marks of exam questions (4 questions)

Part 1 · Vocabulary review answer key. Section A wants the exact English spelling.

Question	Answer	Marks
1	variables	1
2	constant	1
3	operators	1
4	nested	1
5	structured programming	1
6	parameters	1
7	function	1
8	local variable	1
9	global variable	1

10

Example solution:

```

FUNCTION Compare(String1, String2 : STRING, __
                CaseMatters : BOOLEAN, Position : CHAR) RETURNS
BOOLEAN
    DECLARE S1Length : INTEGER

    S1Length ← LENGTH(String1)
    IF LENGTH(String2) < S1Length THEN
        RETURN FALSE // String2 is shorter than String1
    ENDIF

    IF CaseMatters = FALSE THEN
        String1 ← TO_UPPER(String1)
        String2 ← TO_UPPER(String2)
    ENDIF

    CASE Position
        'e' : String2 ← RIGHT(String2, S1Length)
        's' : String2 ← LEFT(String2, S1Length)
    ENDCASE

    IF String1 = String2 THEN
        RETURN TRUE
    ELSE
        RETURN FALSE
    ENDIF

ENDFUNCTION

```

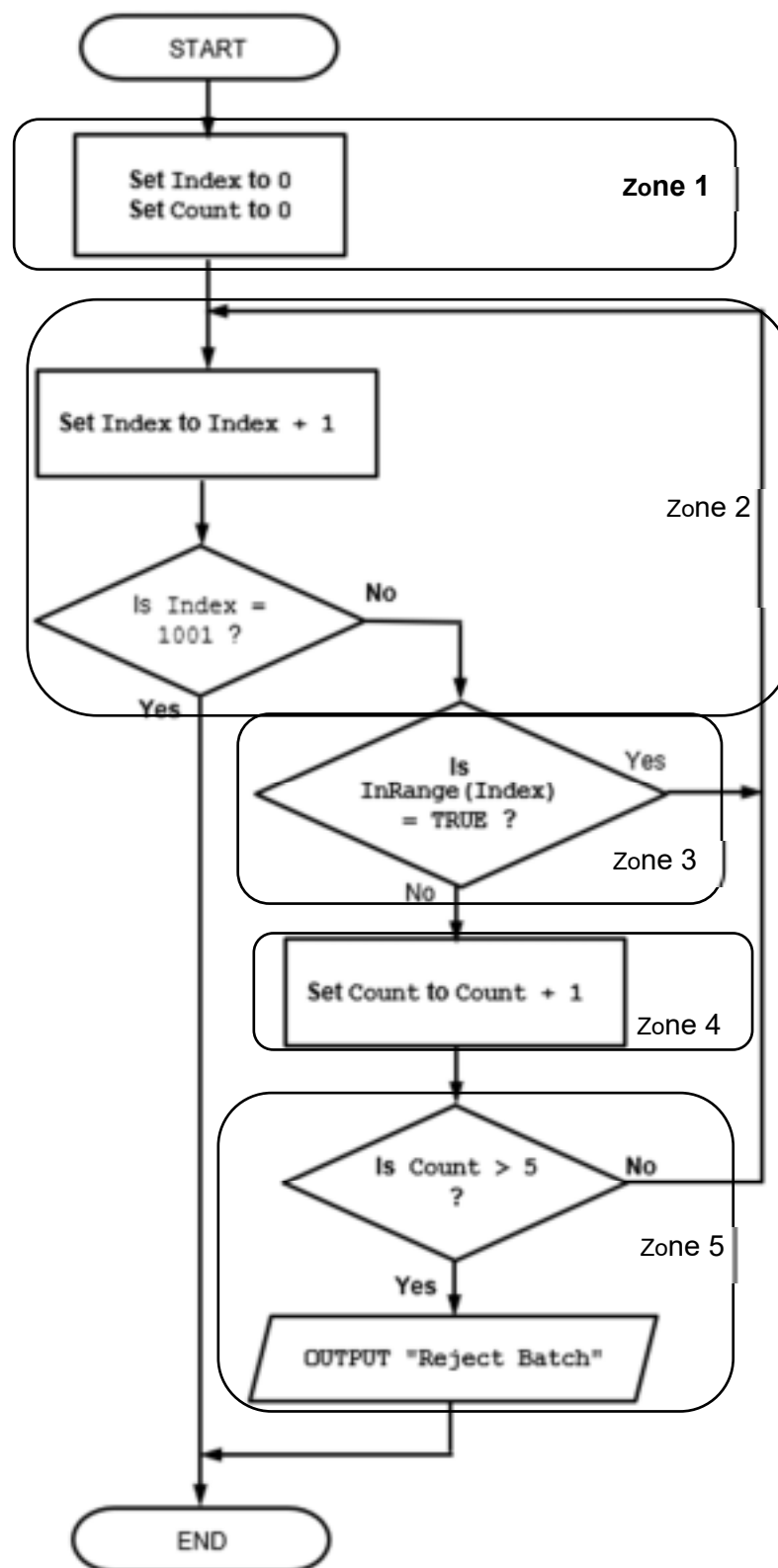
Mark as follows:

- MP1** Function heading **and** parameters **and** ending **and** return type
- MP2** Calculate length of String1
- MP3** **if** String2 is shorter than String1, return FALSE
- MP4** Compare (modified) strings
- MP5** Test CaseMatters - if FALSE **and** convert two string(s) to same case
- MP6** Test for the value of 's'/'e' **and** form modified string(s) in **one** or both cases
- MP7** Return appropriate BOOLEAN value in all cases

11	<p>Example solution:</p> <pre> FUNCTION RollDice(NoOfTimes : INTEGER) RETURNS REAL DECLARE RollValue : INTEGER DECLARE Average : REAL DECLARE Count : INTEGER DECLARE Sum : INTEGER Sum ← 0 FOR Count ← 1 TO NoOfTimes RollValue ← INT(RAND(6)) + 1 OUTPUT RollValue Sum ← Sum + RollValue NEXT Count Average ← Sum / NoOfTimes RETURN Average ENDFUNCTION </pre> <p>MP1 Declare all variables used and initialise Sum to 0</p> <p>MP2 Loop for 'number of times' parameter</p> <p>MP3 Use RAND() function with Integer parameter in a loop</p> <p>MP4 Use INT() function in a loop</p> <p>MP5 Generate a random integer between 1 and 6 in a loop</p> <p>MP6 Output each value generated in a loop</p> <p>MP7 Calculate Sum and if Average used check declared as REAL and return Average and check function header returns REAL</p>
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12(a)(i)	<p>Example solution using AND</p> <pre> IF Batch[ThisIndex].Weight >= Min AND Batch[ThisIndex].Weight <= Max THEN </pre> <p>Alternative solution using OR</p> <pre> IF Batch[ThisIndex].Weight < Min OR Batch[ThisIndex].Weight > Max THEN </pre> <p>Mark as follows:</p> <ol style="list-style-type: none"> 1. Reference to Batch[ThisIndex].Weight 2. A valid check for one boundary 3. A valid check for other boundary with correct logic operator
12(a)(ii)	<p>One mark for either:</p> <ul style="list-style-type: none"> • Set the Item_ID field to an empty string / NULL / invalid value • Set Weight to <= 0 / zero

12(b)



One mark per zone

MyCount ← 101 REPEAT OUTPUT MyCount MyCount ← MyCount + 2 UNTIL MyCount > 199 One mark for each of the following: Counter initialisation before loop Repeat ... Until loop Method for choosing (correct range of) odd numbers Output all odd numbers in the range	
<ul style="list-style-type: none">• The identification of the modules // Checkout, Card pa• The <u>hierarchy</u> of modules (allow 'relationship')• <u>Parameters/data/variables</u> passed between modules ,• The <u>sequence</u> One mark per item Max 3	
FUNCTION CardPayment (Amount : REAL, Name :	
 One mark per underlined part Parameter order not significant Function name and parameter names not important but m	