

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

Example solution:

```

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

```

MP1 Declare all variables used **and** initialise Sum to 0**MP2** Loop for 'number of times' parameter**MP3** Use RAND() function with Integer parameter **in a loop****MP4** Use INT() function **in a loop****MP5** Generate a random integer between 1 and 6 **in a loop****MP6** Output each value generated **in a loop****MP7** Calculate Sum **and** if Average used check declared as REAL **and** return Average **and** check function header returns REAL

12(a)(i)

Example solution using AND

```

IF Batch[ThisIndex].Weight >= Min AND
  Batch[ThisIndex].Weight <= Max THEN

```

Alternative solution using OR

```

IF Batch[ThisIndex].Weight < Min OR
  Batch[ThisIndex].Weight > Max THEN

```

Mark as follows:

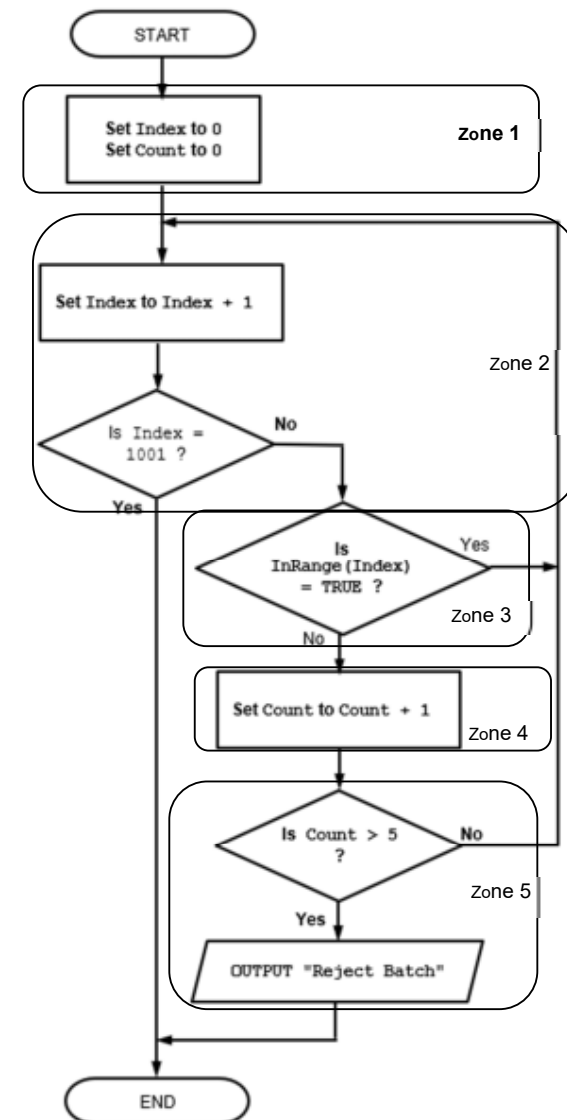
1. Reference to Batch[ThisIndex].Weight
2. A valid check for one boundary
3. A valid check for other boundary with correct logic operator

12(a)(ii)

One mark for either:

- 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 hierarchy of modules (allow 'relationship')• Parameters/data/variables passed between modules /• <u>The sequence</u> <p>One mark per item</p> <p>Max 3</p> <p>FUNCTION CardPayment (Amount : REAL, Name :</p> <p>One mark per underlined part</p> <p>Parameter order not significant</p> <p>Function name and parameter names not important but mi</p>