UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

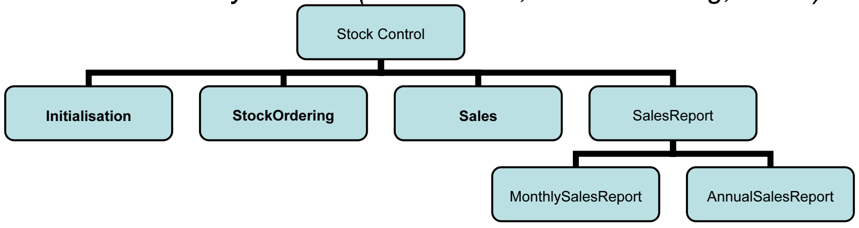
MARK SCHEME for the October/November 2011 question paper for the guidance of teachers

9691 COMPUTING

9691/23 Paper 2 (Written Paper), maximum raw mark 75

1 **(a)** e.g.
-each can work on individual modules
-modules can be written in parallel
(answer must be specific to this scenario) Max [1]

(b) *Each box correctly labeled (Initialisation, StockOrdering, Sales) Order significant*



[1]

(c) *1 mark for 2 boxes under SalesReport*
1 mark for correct labelling [2]

(d) -these will be local variables
-that only have effect in the module they are in // local scope
-stored in different memory locations
-and have no meaning outside that module Max [2]

(e) **(i)** -keywords/reserved words
-a word in the vocabulary of the <u>language</u>
-that can only have the meaning defined in that language Max [1]

(ii) e.g. Visual Basic:
-names must begin with a letter
-must not contain a space/punctuation characters/certain characters
-must be unique <u>in their block/scope</u>
-can't be more than 64 characters
-can't be a keyword Max [3]

(iii) Any keyword // word breaking a rule given by the candidate [1]

(f) **(i)** 604 [1]

(ii) (a+b)/100 [1]

(iii) Black box CAO [1]

(g) **(i)** -valid/normal data
-extreme / boundary data [2]

(ii) 6 different types of test data sets + 6 sensible reasons
Reason must relate to the scenario
Value + correct reason = 1 mark [6]

(h) (i) (PromotionCode="gold") OR (PromotionCode="silver") OR (PromotionCode="bronze")

1 mark for 3 separate correct conditions
1 mark for ORs

Alternative answer:
PromotionCode IN ["gold","silver","bronze"]
2 marks (1 mark for IN, 1 mark for ["gold","silver","bronze"]) [2]

(ii) -wrong or no promotion rate applied
-the program would not find associated records [2]

(iii) *1 mark for clear information*
1 mark for choice as a drop-down list
1 mark for move on button Max [2]

2 (a) (i) -Valid data entered CAO [1]

(ii) -Invalid data. Try again CAO [1]

(b) e.g. Pascal

```
READLN (Position);
IF Position = 'F'
  THEN WRITELN('Valid data entered')
  ELSE
    IF Position = 'D'
      THEN WRITELN('Valid data entered')
      ELSE
        IF Position = 'G'
          THEN WRITELN('Valid data entered')
          ELSE WRITELN('Invalid data. Try again');
```

e.g. VB6

```
Position = txtBox.Text
IF Position = "F" THEN
  MsgBox "Valid data entered"
ELSEIF Position = "D" THEN
  MsgBox "Valid data entered"
ELSEIF Position = "G" THEN
  MsgBox "Valid data entered"
ELSE
  MsgBox "Invalid data. Try again"
END IF
```

e.g. VB 2005

```
Position = Console.ReadLine
IF Position = "F" THEN
  Console.WriteLine("Valid data entered")
ELSEIF Position = "D" THEN
  Console.WriteLine("Valid data entered")
ELSEIF Position = "G" THEN
  Console.WriteLine("Valid data entered")
ELSE
  Console.WriteLine("Invalid data. Try again")
END IF
```

e.g. C#

```
position = Console.ReadLine();
if (position = "F")
  {
    Console.WriteLine("Valid data entered");
  }
else if (position = "D")
  {
    Console.WriteLine("Valid data entered");
  }
else if (position = "G")
  {
    Console.WriteLine("Valid data entered");
  }
else
  {
    Console.WriteLine("Invalid data. Try again");
  }
```

1 mark for correct input
1 mark for 1st condition correct
1 mark for all conditions correct
1 mark for correct output for valid input
1 mark for correct output for invalid input
1 mark for conditions indented Max [5]

(c) -Sequence, selection *(in any order, these words only)* [1]

(d) -A process of repeating
-A block of statements/number of steps
-Until some condition is met Max [2]

(e) *1 mark for a counter variable*
1 mark for correctly initialising counter
1 mark for incrementing counter
1 mark for correct condition for terminating
1 mark for correct output Max [5]

(f)

Field Name	Data Type	Field Size (bytes)	
PlayerID	Integer/byte/shortint	a value within 1–6	*NOT a range*
Sex	Boolean/character	1	
PlayerName	String/Text	a value within 10–50	*NOT a range*
Position	Character/String	1	
DateOfBirth	Date/Integer/String	2/4/6/8	

1 mark per cell [10]

(g) (i) -logic (error) [1]

	(i)	(ii)
EITHER:	Index ← 1	Index ← 0
OR:	UNTIL Index = 45	UNTIL Index >45 or UNTIL Index = 46
	[1]	[1]

(h)
```
Gtotal ← 0
FOR Index ← 1 TO 45
  IF Club[Index].Position = 'G'
    THEN
      Gtotal ← Gtotal + 1
  ENDIF
ENDFOR
```

1 mark for correct FOR loop
1 mark for correct content of IF statement and condition
1 mark for ENDFOR in correct position or equivalent structure [3]

3 (a)

s	x	q[1]	q[2]	q[3]	q[4]	Surprise
CHO JABA						
	1					
		C				
	2					
			H			
	3					
				O		
	4					
						CHO

1 mark for correct x values (2,3,4)
1 mark for correct q values (C, H, O)
1 mark for correct surprise (CHO) [3]

(b) -pick out the first word of a sentence/group of words [1]

(c) -assigns return value to Surprise
-that value is returned to the function call
-name of function used as a variable Max [2]

(d) -is a subroutine // can be called more than once // can be called from different locations
-given a name/identifier
-may take parameter values from the program
-returns value to the program Max [3]

(e) (i) -ends REPEAT
-by finding an empty space
-indicating end of word Max [2]

(ii) -indentation
-meaningful/sensible variable names [2]

(f) -characters are compared in turn
-from the left hand side/start of each word
-the first higher code value determines the largest word
-if 2 words are the same when one ends
-the other is the larger alphabetically Max [3]