**Title**

# O-Level & IGCSE Topical Computer Science (PAPER-2)

Syllabus 2025-2026-2027

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**Arrange & Design by**

Muhammad Majid Hussain


**Legal Advisor**


**Ch. Muhammad Naseer (Kakuana)**
Advocate Hight Court
0300-7658213
Chamber # 26, Randhawa Law Building
Near CPO office Distt. Katchery, Faisalabad.

**Mian Zahid Iqbal**
Advocate Hight Court
0321-7618063
Chamber # 26, Randhawa Law Building
Near CPO office Distt. Katchery, Faisalabad.


**For Complaints/Order**


**Rabbani Publications**
36-Z, Commercial Center, Near Mujahid Hospital, Madina Town, Faisalabad.
0332-6682372, 0300-4537372
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# PREFACE

**IN THE NAME OF ALLAH, MOST GRACIOUS AND MOST MERCIFUL.**

This **Paper 2** publication has been carefully curated to provide students with an advanced, academically rigorous resource that aligns with the extended requirements of the updated Cambridge O Level and IGCSE syllabus for **2025–2027**. Paper 2 demands a deeper analytical approach, refined writing skills, and the ability to apply content knowledge across diverse question formats. To meet these expectations, this volume offers a comprehensive, topic-wise arrangement of unsolved past paper questions, ensuring focused and thorough practice.

By presenting the questions in an unsolved form, students are encouraged to engage in reflective thinking, develop independent problem-solving abilities, and craft responses that align with the intellectual standards set by Cambridge examiners. Following each topical section, the official Cambridge Mark Scheme has been included to help learners evaluate their answers and understand the level of clarity, structure, and precision required for high-level performance.

Complementing the past paper practice, this edition integrates relevant exercises from the Cambridge Workbook, enhancing conceptual development and strengthening examination readiness. The inclusion of February–March variants provides further breadth to the question bank, ensuring that students are exposed to a wide range of assessment styles and difficulty levels.

This book stands as a testament to the ongoing commitment of Rabbani Publications & Photocopier to providing high-quality academic materials. Every page reflects a dedication to excellence, accuracy, and educational responsibility. It is our sincere hope that this volume will prove to be an invaluable resource for students, teachers, and institutions seeking a refined and effective tool for examination preparation.

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**Team Coordinator**

in case of any suggestion for improvement Team Head can be contacted at

**Cell: 0332-6682372 / Email: rabanipublications@gmail.com**

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Q2/22/F/M/18

1 An algorithm has been written in pseudocode to input some numbers and print out any numbers that are greater than or equal to `100`. The number `999` stops the algorithm.

```
INPUT Number
WHILE NUMBERS <> 999 DO
  IF Number > 100 THEN PRINT Number ENDIF
ENDWHILE
PRINT Number
```

**(a)** Find the **four** errors in the pseudocode and suggest corrections.

Error 1 .....

Correction .....

.....

Error 2 .....

Correction .....

.....

Error 3 .....

Correction .....

.....

Error 4 .....

Correction .....

..... [4]

**(b)** Show, using pseudocode, how you would change the corrected algorithm to print out any numbers between `100` and `200` inclusive.

.....

.....

.....

.....

.....

.....

.....

.....[2]

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Q4/23/O/N/18

**2** This is a section of program code.

```
1 Total = 100.00
2 PRINT 'Enter the height of each member of your class, one at a
  time, when prompted'
3 FOR Count = 1 TO 30
4   PRINT 'Enter a height in metres'
5   INPUT Height
6   Total = Total + Height
7   PRINT Total / 30
8   Count = Count + 1
9 NEXT Count
```

**(a)** There are **three** errors in this code.

State the line numbers that contain the errors and describe how to correct each error.

Error 1 .....

.....

.....

Error 2 .....

.....

.....

Error 3 .....

.....

..... [3]

**(b)** State the purpose of this program.

.....

.....

.....[1]

RPC
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Q2/22/M/J/19

**3 (a)** An algorithm has been written in pseudocode to input 100 numbers, select and print the largest number and smallest number.

```
Count ← 1
INPUT Number
High ← Number
Low ← Count
REPEAT
  INPUT Number
  IF Number > High
    THEN
      High ← Number
  ENDIF
  IF Number > Low
    THEN
      Low ← Number
  ENDIF
  Count ← Count + 1
UNTIL Count = 99
PRINT "Largest Number is ", Number
PRINT "Smallest Number is ", Low
```

Find the **four** errors in the pseudocode and suggest a correction for each error.

Error 1.....

Correction .....

.....

Error 2.....

Correction .....

.....

Error 3.....

Correction .....

.....

Error 4.....

Correction .....

.....

[4]

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**(b)** Show how you would change the corrected algorithm to total the numbers and print the total. Use a variable `Total`.

.....

.....

.....

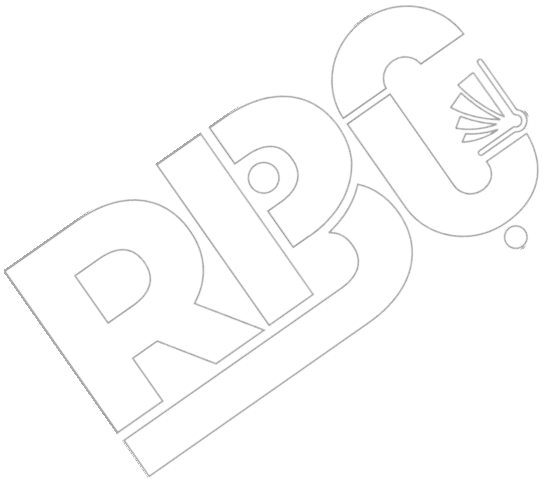
.....

.....

.....

.....

..... [4]



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Q2/22/O/N/19

**4** An algorithm has been written in pseudocode to select a random number using the function `RandInt(n)`, which returns a whole number between 1 and the argument n. The algorithm then allows the user to guess the number.

```
Number ← RandInt(100)
TotalTry ← 1
REPEAT
  PRINT "Enter your guess now, it must be a whole number"
  INPUT Guess
  IF TotalTry > Number
    THEN
      PRINT "Too large try again"
  ENDIF
  IF Guess > Number
    THEN
      PRINT "Too small try again"
  ENDIF
  TotalTry ← Guess + 1
UNTIL Guess <> Number
TotalTry ← TotalTry - 1
PRINT "Number of guesses ", TotalTry
```

Find the **four** errors in the pseudocode and suggest a correction to remove each error.

Error 1 .....

Correction .....

.....

Error 2 .....

Correction .....

.....

Error 3 .....

Correction .....

.....

Error 4 .....

Correction .....

.....

[4]

RABBANI BROTHERS & SON's

Q4/23/O/N/19

**5** The following pseudocode algorithm uses nested IF statements.

```
IF Response = 1
  THEN
    X ← X + Y
  ELSE
    IF Response = 2
      THEN
        X ← X - Y
      ELSE
        IF Response = 3
          THEN
            X ← X * Y
          ELSE
            IF Response = 4
              THEN
                X ← X / Y
              ELSE
                OUTPUT "No response"
            ENDIF
        ENDIF
    ENDIF
ENDIF
```

**(a)** Name the type of statement demonstrated by the use of `IF … THEN … ELSE … ENDIF`

.....

..... [1]

**(b)** Re-write the pseudocode algorithm using a `CASE` statement.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

RABBANI BROTHERS & SON's

Q4/21/M/J/20

**6** The pseudocode algorithm shown should allow numbers to be entered and should allow 50 numbers to be stored in an array.

```
Count ← 0
REPEAT
  INPUT Values[Count]
  Count ← Count + 1
UNTIL Count = 0
```

**(a)** Explain why the algorithm will never end.

.....

.....

.....

.....

..... [2]

**(b)** Re-write the original pseudocode so that it terminates correctly **and** also prevents numbers below 100 from being stored in the array `Values[ ]`

.....

.....

.....

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.....

.....

..... [4]

RBC

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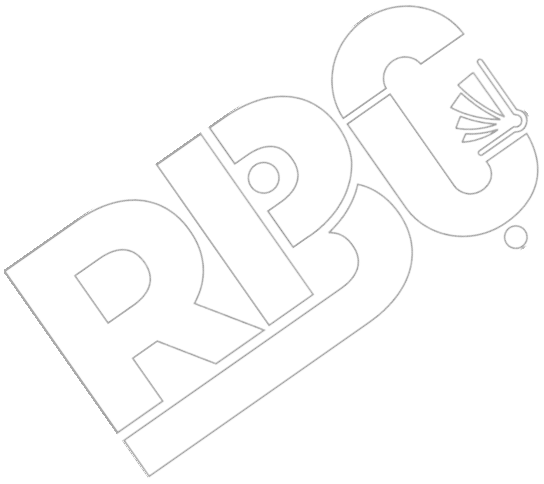
**(c)** Describe how you could change your pseudocode in **part (b)** so that it prevents numbers below 100 and above 200 from being stored in the array `Values[ ]`

.....

.....

.....

..... [2]



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Q3/22/M/J/20

7 **(a)** An algorithm has been written in pseudocode to input the names and marks of 35 students. The algorithm stores the names and marks in two arrays `Name[]` and `Mark[]`. The highest mark awarded is found and the number of students with that mark is counted. Both of these values are output.

```
01  HighestMark ← 100
02  HighestMarkStudents ← 0
03  FOR Count ← 1 TO 35
04      OUTPUT "Please enter student name"
05      INPUT Name[Count]
06      OUTPUT "Please enter student mark"
07      INPUT Mark[Counter]
08      IF Mark[Count] = HighestMark
09        THEN
10          HighestMarkStudents ← HighestMarkStudents - 1
11      ENDIF
12      IF Mark[Count] > HighestMark
13        THEN
14          Mark[Count] ← HighestMark
15          HighestMarkStudents ← 1
16      ENDIF
17  NEXT Count
18  OUTPUT "There are ", HighestMarkStudents," with the highest mark of ",
      HighestMark
```

Give line numbers where the **four** errors are to be found in the pseudocode. Suggest a correction for each error.

Error 1 line number .....

Correction .....

.....

Error 2 line number .....

Correction .....

.....

Error 3 line number .....

Correction .....

.....

Error 4 line number .....

Correction .....

.....

[4]

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