**Text

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**2022 DEV 1 SUPPLEMENTARY QUESTION PAPER**

SUBJECT: DEVELOPMENT SOFTWARE 1 MAINSTREAM & EXTENDED YEAR 2

SUBJECT CODE: DES15P0, DEV11P0, DEV15P0, DES15B0, DEV11BO, DEV15B0, DES15Q0, DEV15Q0

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DURATION : 180 minutes

MARKS : 100

TEST INSTRUCTIONS

This test is for marks and test conditions for a closed book test apply.

During the test:

All cell phones must be switched off and placed out of reach.

You may not consult notes, slides, videos etc.; you may not photograph or record the test; you may not communicate with anyone in any way; you may not use email, cell phones, etc.

There are 21 questions – make sure you answer all questions.

**YOU HAVE 180 MINUTES TO ANSWER ALL QUESTIONS**

**QUESTION 1 [1 mark]**

**An Algorithm is a \_\_\_\_\_\_\_\_\_\_\_**

a) A procedure for solving a problem  
b) A problem  
c) A real life mathematical problem  
d) None of the mentioned

**QUESTION 2 [1 mark]**

**An algorithm: can be shown using \_\_\_\_\_\_\_\_\_**

a) flowcharts  
b) pseudocodes  
c) instructions in common language  
d) all of the mentioned

**QUESTION 3 [1 mark]**

**Changing a software program because of changes in business practices or changes in tax laws is an example of**

**a**. Maintenance

b. Documentation

b Coding

c. Debugging

**QUESTION 4 [1 mark]**

**Of the following, which one is not a keyword?**

a) Read  
b) Write  
c) start  
d) endif

**QUESTION 5 [1 mark]**

**Which of the following statements concerning sequence control structures is untrue?**

**a.** Some instructions can be omitted

b. Instructions are executed in the sequence in which they are written.

c. No instructions are repeated

d. All instructions are executed

**QUESTION 6 [1 mark]**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used to show hierarchy in a pseudocode**

**a**) Indentation  
b) Curly Braces  
c) Round Brackets  
d) Semicolon

**QUESTION 7 [1 mark]**

**The statement that tells the computer to get a value from an input device and store it in a memory location.**

a) read  
b) write  
c) READ  
d) WRITE

**QUESTION 8 [1 mark]**

**A statement used to close the IF block**

a) ELSE  
b) ELSEIF  
c) END  
d) ENDIF

**QUESTION 9 [1 mark]**

**If you keep a variable undeclared, it is automatically taken as to which of the following data type in Visual Basic?**

a) Char  
b) Int  
**c) Object**  
d) String

**QUESTION 10 [1 mark]**

**Given that GT1 = 1.8, GT2 = 2, and GT3 = 4, the following code will display TRUE on the screen:**

IF (GT1 > GT2) OR (GT2 > GT3) THEN DISPLAY “TRUE” ELSE DISPLAY “FALSE” END IF

a. True

b. False

**QUESTION 11 [ 3 marks]**

**IF X1 < X2 THEN DISPLAY X2 ELSE DISPLAY X1 ENDIF is the correct code to use to display the larger of two unequal numbers**

a.TRUE

b FALSE

**QUESTION 12 [ 3 marks]**

**The following code correctly counts the number of patients aged 100 years in the variable COUNT1**

DECLARE J, AGE, TOTAL, COUNT1 AS REAL

FOR J = 1 to 100

ACCEPT AGE

SELECT CASE J

CASE 100

COUNT1 = COUNT1 + 1

END SELECT

NEXT J

a. FALSE

b. TRUE

**QUESTION 13 [ 5 marks]**

**The code below correctly adds up all beds in the variable COUNT1.**

DECLARE J, BEDS, TOTALBEDS, COUNT1 AS INTEGER

FOR J = 1 TO 20

ACCEPT BEDS

IF BEDS < > 100 THEN

COUNT1 = COUNT1 + BEDS

ENDIF

NEXT J

a. TRUE

b. FALSE

**QUESTION 14** [ **5 marks]**

**The following code displays 6 on the screen**

DECLARE NUMBER AS INTEGER

NUMBER = 1

DO WHILE NUMBER < 5

NUMBER= NUMBER \* 3

LOOP

DISPLAY NUMBER

a. FALSE

b. TRUE

**QUESTION 15** [ **5 marks]**

**The following code displays BLUE on the screen:**

DECLARE COLOUR, BLUE AS STRING

BLUE = “A”

SELECT CASE COLOUR

CASE IS <> BLUE

DISPLAY BLUE

CASE ELSE

DISPLAY “BLUE”

END SELECT

a.FALSE

b.TRUE

**QUESTION 16** [ **5 marks]**

**What is displayed on the screen by the following code:**

DECLARE VAR1, VAR2 AS REAL

VAR1 = 20

VAR2 = VAR1 \ 4

IF VAR2 \* 5 > 30 AND VAR1 > VAR2 \* 3 THEN

DISPLAY VAR2

ELSE

DISPLAY VAR1

ENDIF

a. 20

b. NONE OF THESE

c. VAR2

d. VAR1

**QUESTION 17 [ 5 marks]**

**What is displayed on the screen by the following code if 5 is input:**

DECLARE NUMBER AS REAL

ACCEPT NUMBER

SELECT CASE NUMBER

CASE 3

DISPLAY "CASE 1"

CASE 3 TO 5

DISPLAY "CASE 2"

CASE 5 TO 10

DISPLAY "CASE 3"

END SELECT

A. CASE 2

B. CASE 1

C. CASE 3

D. NONE OF THE THESE

**QUESTION 18 [6 MARKS]**

**What will be displayed by the following code snippets:**

For num As Integer = 5 To 10

If num MOD 2 = 0 Then

Display num

End If

Next

Declare sum As integer

For num As Integer = 5 To 5

sum += num

End If

Next

Display sum

**QUESTION 19 [12 MARKS]**

Dim grade As Integer

Display “Enter grade”

Accept grade

If grade >= 75 AND grade < 100 then

Display “A”

Else

If grade > 50 AND grade <= 74 then

Display “B”

Else

If grade >= 40 AND grade <= 49 then

Display “C”

Else

Display grade “not included in grade”

End if

End if

End if

**Required**

1. Rewrite the above code snippet using a **SELECT CASE** structure [10 marks]
2. What will be displayed if the grade is 50 [2 marks]

**QUESTION 20 [9 MARKS]**

**In order to plan their purchases for the following year, JJ Motors in PE would like to know what kind of automobiles were bought the most in January of this year (2022).**

The types were given codes as shown in the table below:

|  |  |
| --- | --- |
| **VIHICLES TYPE** | **CODE** |
| Mercedes-Benz | MB |
| Suzuki | SK |
| Other | DO |

They want a program which will accept the code for the vehicles type (MB or SK or DO) and the quantity of vehicle that the person bought in a month - example MB 30 means the person bought 30 Mercedes-Benz in a month. The program must use a FOR loop to repeat the input for 350 people and accumulate or count as required. When there is no more input, the program should display the following (each with a meaningful message):

* the total number of people who bought more than 50 Suzuki in a month
* the total quantity of Mercedes-Benz bought in a month

**Do the following:**

**Draw an IPO chart for the program [ 9 marks]**

**QUESTION 21 [32 MARKS]**

Smith BnB is a bed and Breakfast (BnB) in Queenstown. The BnB offers three different types of accommodation for guests, a standard room, a suite room, and a king room.  See the room cost below:

|  |  |
| --- | --- |
| Type of room | Price |
| Standard | 700 |
| Deluxe | 1000 |
| King | 1500 |

The BnB requires an application that will accept from the name of the guest, the cell phone number of the guest, the type of room the guest wants (**S** for Standard room, D for Deluxe room, and K for King room), and the number of days the guest will spend at the BnB. The application should then calculate and the price the guest should pay. Note a 10% discount is given to guests who book for more than 5 days. The input must be repeated until the type of room entered is **XY.** When there’s no more input display the following with meaningful messages:

* The number of people who chose the King room
* The total number of guests who booked accommodation
* The total amount made from all the rooms

**Required**

Write the pseudocode code to solve the above problem