WALTER SISULU UNIVERSITY

2020 DEGREE AND DIPLOMA TESTS:

FINAL EXAM – QUESTION PAPER

SUBJECT : DEVELOPMENT SOFTWARE 1 MAINSTREAM

: DEVELOPMENT SOFTWARE 1 EXTENDED YEAR 2

SUBJECT CODE : DES15P0, DEV11P0, EDS12P0

: DES15B0, DEV11B0, EDV10B0

: DES15Q0, DEV11Q0

EXAMINER/S : MS L V D MERWE / MS S TWETWA

: MR C MATOBOBO

: MS K SPELMAN

MODERATOR : MR P NOMNGA

DURATION : 180 minutes online (3 hours)

MARKS : 60

INSTRUCTIONS

INSTRUCTIONS

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

During the test: 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, navigate to other sites, etc.

Follow the instructions shown. Click > to move to the next question. You may not change an answer once submitted. There are 17 short questions and 1 long question.

If the network goes down, you should be able to continue from where you were.

You are only allowed one attempt. Results will be shown after they have been graded by the lecturer.

YOU HAVE 150 MINUTES TO ANSWER ALL QUESTIONS

OPTIONS

Show instructions: yes Open in new window: yes

Multiple attempts: no Force completion: no

Auto submit : on Set timer: 150 minutes

Test Presentation: one at a time, prohibit backtracking, randomize questions

QUESTION 1 [ 1 mark ]

. Syntax errors appear once the application is in use and they are most often unwanted or unexpected results in response to user action

a. FALSE

b. TRUE

QUESTION 2 [ 1 mark ]

. WiseUp is an example of system software

a. FALSE

b. TRUE

QUESTION 3 [ 1 mark ]

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

1. Maintenance
2. Documentation b Coding
3. Debugging

QUESTION 4 [ 1 mark ]

. Object code instructions are written in

a. Machine Language

1. Assembler Language
2. Java
3. NONE OF THESE

QUESTION 5 [ 1 mark ]

. Which statement is inaccurate (incorrect) about sequence control structures

a. Some instructions can be omitted

1. Instructions are executed in the sequence in which they are written.
2. No instructions are repeated
3. All instructions are executed

QUESTION 6 [ 3 marks]

. The following code displays 6 on the screen

DECLARE NUMBER AS INTEGER

NUMBER = 2

DO WHILE NUMBER < 5

NUMBER= NUMBER \* 3

LOOP

DISPLAY NUMBER

a. FALSE

b. TRUE

. 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 7 [ 3 marks]

. The following code displays RED on the screen:

DECLARE COLOUR, RED AS STRING

RED = “A”

SELECT CASE COLOUR

CASE IS <> RED

DISPLAY RED

# CASE ELSE

DISPLAY “RED”

END SELECT

a. FALSE

b. TRUE

. The following code displays RED on the screen:

DECLARE COLOUR, RED AS STRING

RED = “A”

SELECT CASE COLOUR

CASE RED

DISPLAY RED

CASE ELSE

DISPLAY “RED”

END SELECT

a. FALSE

b. TRUE

QUESTION 8 [ 3 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 OR VAR1 > VAR2 \* 3 THEN

DISPLAY VAR2

ELSE

DISPLAY VAR1

ENDIF

1. NONE OF THESE
2. VAR2
3. 20
4. VAR1

. 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

1. 20
2. NONE OF THESE
3. VAR2
4. VAR1

QUESTION 9 [ 3 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](#_Toc30916)

[DISPLAY "CASE 1"](#_Toc30917)

[CASE 3 TO 5](#_Toc30918)

[DISPLAY "CASE 2" CASE 5 TO 10](#_Toc30919)

## DISPLAY "CASE 3"

END SELECT

1. CASE 2
2. CASE 1
3. CASE 3
4. NONE OF THE THESE

. 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, 5

## DISPLAY "CASE 2"

CASE 5 TO 10

DISPLAY "CASE 3"

END SELECT

1. CASE 2
2. CASE 1
3. CASE 3
4. NONE OF THE THESE

QUESTION 10 [ 3 marks ]

.The following 2 blocks of code will always produce the same result:

WAGE = HOURS \* 20

IF HOURS > 40 THEN

WAGE = HOURS \* 30

ENDIF

AND

IF HOURS > 40 THEN

WAGE = HOURS \* 30

ELSE

WAGE = HOURS \* 20

ENDIF

a. FALSE

b. TRUE

.The following 2 blocks of code will always produce the same result:

WAGE = HOURS \* 20

IF HOURS > 40 THEN

WAGE = HOURS \* 30

ENDIF

AND

IF HOURS <= 40 THEN

WAGE = HOURS \* 20

ELSE

WAGE = HOURS \* 30

ENDIF

a. FALSE

b. TRUE

QUESTION 11 [ 3 marks ]

.What value is displayed on the screen by the following code if these values are input: 10 30 99

DECLARE BOOKS, TOTAL, COUNT AS INTEGER

ACCEPT BOOKS

DO WHILE BOOKS <> 99

IF BOOKS > 10 AND BOOKS <= 99 THEN

COUNT = COUNT + 1

ENDIF

ACCEPT BOOKS

LOOP

DISPLAY COUNT

1. 1
2. 2
3. 3
4. NONE OF THESE

.What value is displayed on the screen by the following code if these values are input: 10 30 99

DECLARE BOOKS, TOTAL, COUNT AS INTEGER

ACCEPT BOOKS

DO WHILE BOOKS <> 99

IF BOOKS >= 10 OR BOOKS <= 99 THEN

COUNT = COUNT + 1

ENDIF

ACCEPT BOOKS

LOOP

DISPLAY COUNT

1. 2
2. 1
3. 3
4. NONE OF THESE

QUESTION 12 [ 3 marks ]

. Evaluate the following expression:

( 9 < 2 ^ 2 + 5 ) OR ( 8 \* 3 = 4 + 5 \ 3 ) AND NOT ( 7 < 7 MOD 2)

a. FALSE

b. TRUE

. Evaluate the following expression:

( 9 < 2 ^ 2 + 5 ) OR ( 8 \* 3 = 4 + 5 \ 3 ) OR NOT ( 7 < 7 MOD 2)

a. FALSE

b. TRUE

QUESTION 13 [ 3 marks ]

. What is displayed on the screen by the following code if the input is: F 32

DECLARE AGE AS INTEGER

DECLARE GENDER, MSG AS STRING

ACCEPT GENDER

ACCEPT AGE

SELECT CASE AGE

CASE IS < 35

MSG = “NO BONUS” CASE ELSE

MSG = “BONUS” END SELECT

IF GENDER = “F” THEN

MSG = “BONUS”

ENDIF

DISPLAY MSG

1. BONUS
2. NO BONUS
3. MSG
4. NONE OF THE ABOVE

. What is displayed on the screen by the following code if the input is: F 32

DECLARE AGE AS INTEGER

DECLARE GENDER, MSG AS STRING

ACCEPT GENDER

ACCEPT AGE

SELECT CASE AGE

CASE IS < 35

MSG = “NO BONUS” CASE ELSE

MSG = “BONUS” END SELECT

IF GENDER = “M” THEN

MSG = “BONUS”

ENDIF

DISPLAY MSG

1. NO BONUS
2. BONUS
3. MSG
4. NONE OF THE ABOVE

QUESTION 14 [ 3 marks ]

. The following code displays 4 on the screen:

W = 1

DO WHILE W < 3

K = 4

W = W + 1

IF W = 2 THEN K = K \* 2

ENDIF

LOOP

DISPLAY K

a. FALSE

b. TRUE

. The following code displays 6 on the screen:

W = 1

DO WHILE W < 3

K = 6

W = W + 1

IF W = 2 THEN

K = K \* 3

ENDIF

LOOP

DISPLAY K

a. FALSE

b. TRUE

QUESTION 15 [3 marks ]

. The following code correctly counts the number of patients over 50 years in the variable COUNT1

DECLARE J, AGE,TOTAL, COUNT1 AS REAL

FOR J = 1 to 50

ACCEPT AGE

SELECT CASE J

CASE IS >= 50

COUNT1 = COUNT1 + 1

END SELECT

NEXT J

a. FALSE

b. TRUE

. The following code correctly counts the number of patients under 50 years in the variable COUNT1

DECLARE J, AGE,TOTAL, COUNT1 AS REAL

FOR J = 1 to 50

ACCEPT AGE

SELECT CASE AGE

CASE IS < 50

COUNT1 = COUNT1 + 1

END SELECT

NEXT J

a. FALSE

b. TRUE

QUESTION 16 [ 5 marks ]

.The following 2 blocks of code will always produce the same result:

DECLARE SALES, DISCOUNT AS REAL

ACCEPT SALES

IF SALES > 20000 THEN

DISCOUNT = 0.2 \* SALES

ENDIF

IF SALES >= 5000 AND SALES <= 20000 THEN

DISCOUNT = 6000

END IF

IF SALES < 4000 THEN

DISPLAY “NO DISCOUNT”

END IF

AND

DECLARE SALES, DISCOUNT AS REAL

ACCEPT SALES

SELECT CASE SALES

CASE IS > 20000

DISCOUNT = 0.2 \* SALES

CASE 5000 TO 20000

DISCOUNT = 6000

CASE IS < 4000

DISPLAY “NO DISCOUNT”

END SELECT

a. FALSE

b. TRUE

. The following 2 blocks of code will always produce the same result:

DECLARE SALES, DISCOUNT AS REAL

ACCEPT SALES

IF SALES > 20000 THEN

DISCOUNT = 0.1 \* SALES

ENDIF

IF SALES >= 5000 OR SALES < 20000 THEN

DISCOUNT = 500

END IF

IF SALES < 4000 THEN

DISPLAY “NO DISCOUNT”

END IF

AND

DECLARE SALES, DISCOUNT AS REAL

ACCEPT SALES

SELECT CASE SALES

CASE IS > 20000

DISCOUNT = 0.1 \* SALES

CASE 5000 TO 20000

DISCOUNT = 500

CASE IS < 4000

DISPLAY “NO DISCOUNT”

END SELECT

a. FALSE

b. TRUE

QUESTION 17 [ 5 marks ]

. The following 2 blocks of code will always produce the same result:

DECLARE J, X AS REAL

FOR J = 0 TO 10 STEP 2

X = J + 3

DISPLAY X

NEXT

AND

DECLARE J, X AS REAL

DO WHILE J < 11

X = J + 3

DISPLAY X

J = J + 2

NEXT

a. FALSE

b. TRUE

. The following 2 blocks of code will always produce the same result:

DECLARE J, X AS REAL

FOR J = 0 TO 10 STEP 3

X = J + 3

DISPLAY X

NEXT

AND

DECLARE J, X AS REAL

DO WHILE J < 11

X = J + 3

DISPLAY X

J = J + 2

NEXT

a. FALSE

b. TRUE

QUESTION 18 [ 15 marks ]

XX stores is selling T shirts at different prices depending on size as shown in the table:

|  |  |  |
| --- | --- | --- |
| SIZE | CODE | PRICE PER T SHIRT |
| SMALL | S | 80 |
| MEDIUM | M | 90 |
| LARGE | L | 100 |

They want a program which will accept the size (S, M or L) and the quantity of T shirts wanted.

Use a DO WHILE to repeat the input until Z is input for the size. Accumulate and count as required. When there is no more input, display the following (each with a meaningful message):

* + the total quantity of large T shirts sold
  + the total price paid for all of the small T shirts sold

Do the following:

a. Write the pseudocode for the program. [ 15 marks ]

QUESTION 18 [ 15 marks ]

XX stores is selling boxes of paper at different prices depending on size as shown in the table:

|  |  |  |
| --- | --- | --- |
| SIZE | CODE | PRICE PER BOX |
| A4 | A4 | 299 |
| A3 | A3 | 399 |
| A1 | A1 | 499 |

They want a program which will accept the size (A1, A3 or A4) and the quantity of boxes wanted.

Use a DO WHILE to repeat the input until ZZ is input for the size. Accumulate and count as required.

When there is no more input, display the following (each with a meaningful message): - the total quantity of boxes of A3 paper sold

- the total price paid for all of the boxes of A1 paper sold

Do the following:

1. Write the pseudocode for the program. [ 15 marks ]

1. PSEUDOCODE [ 15 marks ]

QUESTION 18 [ 15 marks ]

XX stores is selling face masks at different prices depending on size as shown in the table:

|  |  |  |
| --- | --- | --- |
| SIZE | CODE | PRICE PER MASK |
| SMALL | S | 60 |
| LARGE | L | 80 |
| KIDS | K | 30 |

They want a program which will accept the size (S, L or K) and the quantity of masks wanted.

Use a DO WHILE to repeat the input until Z is input for the size. Accumulate and count as required.

When there is no more input, display the following (each with a meaningful message):

* the total quantity of small masks sold
* the total price paid for all of the kids masks sold

Do the following:

a. Write the pseudocode for the program. [ 15 marks ]

a. PSEUDOCODE [ 15 marks ]