

King Saud University
College of Engineering
Civil Engineering Department

GE 209 : Computer Programming
2nd Semester 1422-1423H
Time Allowed : 2 hours

FINAL EXAMINATION

Question No.	Mark
1	
2	
3	
4	
Total	

Mid-term	
Final	
Total	

QUESTION #1 (10 marks):

(a) Given the following values for the variables A, B, C and D:

A= 1.0, B= 2.0, C= 3.0 ,D= 4.0

What would be the resulting vales for SUM1 and SUM2

```
PROGRAM ONE
READ*,A, B, C, D
SUM1=TOTAL(A,B,C)
SUM2=TOTAL(A+B,B,D+2)
PRINT*, SUM1, SUM2
END PROGRAM ONE
!
FUNCTION TOTAL(VAL1, VAL2, VAL3)
TOTAL= VAL1 + VAL2 + VAL3
RETURN
END FUNCTION TOTAL
```

SUM1=	SUM2=
-------	-------

b) The following **FORTRAN 90** computer program has ONE line missing. The line reads the values of the six elements of the array TEST that are arranged in ONE line as shown in the example below:

55.0, 64.0, 88.0, 76.0, 72.0, 100.0

Write down the missing line using implied DO loop.

PROGRAM TWO

REAL:: TEST(6)

--

```
PRINT*, TEST
END PROGRAM TWO
```

(c) The **FORTRAN 90** computer program shown below has some errors so that it can not be compiled and run with these errors. Correct these errors so that the program can be compiled and run. Note: Be careful that crossing out a correct character or symbol is equivalent to leaving an erroneous one.

PROGRAM THREE

REAL: VAL1, VAL2, A B

INTEGER:: DIMENSION(10 , ID1, ID2

INTEGER:: SIG1(5), SIG2(15)

CHARACTER (10) NAME1, NAME2(10)

CHARACTER NAME3(20), NAME4(30)

OPEN(UNIT=13, FILE= DATA.OUT, STATUS= NEW)

READ VAL1, VAL2, A, B, ID1, ID2

PRINT*, VAL1, B

WRITE(13,*) VAL1, VAL2, A

END PROGRAM TREE

QUESTION #2 (10 marks):

Complete the following **FORTRAN 90** program which reads temperature values (real) from a data file “**Inp_Temp**” with “**9999.**” at the end of the input data file. Then it computes and writes the overall percentage average, Maximum and Minimum temperature vales.

(Hint: missing parts are shown in dot lines, No more statements).

Program Temperature

Implicit None

Real :: Temp, Ave_Temp, Max_Temp,

Integer ::

.....

N_Temp = 0

Max_Temp =

Min_Temp = 0.0

Sum = 0.0

Do

Read (5,*).....

If (.....)

N_Temp =

.....Max_Temp = Temp

.....Min_Temp = Temp

Sum = Sum + Temp

End Do

Ave_Temp = Sum / N_Temp * 100.0

Print ('Minimum Temprature = '), Min_Temp

Print ('Maximum Temprature = '), Max_Temp

Print ('Average Temprature = '), Ave_Temp

Close

Stop

End Program Temperature

QUESTION #4 (10 marks):

The names and two marks (midterm and final) of 100 students were entered into a data file called **Student** (each data line contains the student name and his two marks).

Write a **FORTRAN 90** computer program to perform the following:

- (a) Read in 1-D character array **Names** contains student names, and 2-D Real array **marks** contains the two marks of the students from the data file.
- (b) Calculate the following:
 1. The total marks for each student and store them in an array called **Total**.
 2. Number of students who passed **NSP**.
- (c) Print out the results of part b.

Hint: passing mark is > 60 , and character length for names is 15.