K201: The Computer in Business

Second Departmental Exam (B)

March 9, 1982

Signature Key

Name _____

Student Number _____

Instructor's Name _____

Section Number _____

This exam is worth 100 points. Although ample time is allowed, the student is advised to allocate his time wisely. If your response to a question requires more writing area, continue you response on the reverse of the page.

If you require assistance, raise your hand and a proctor will assist you at your seat.

The following questions are worth 3 points each.

B 1. Program maintenance is the process of

a. assuring the operation of the computer by periodic scheduled maintenance of the CPU.
b. changing or modifying programs from time to time to keep them up-to-date and useful.
c. modifying the data collection and data entry system when new situations arise so that the program can be used with no changes.
d. re-punching cards as they become too worn to be read by the card reader.
e. none of the above.

C 2. Parameters are used in a program to

a. complicate the program for security reasons.
b. simplify the debugging process.
c. make the program more applicable to a variety of situations without modifying the program.
d. create a program that is easy to document for future use.
e. both c and d.

C 3. Subscripts for an array

a. can be any integer number.
b. can be any FORTRAN variable.
c. must be in integer mode.
d. both b and c.

E 4. A sequence of statements that are executed repetitively for a specified number of times is a(n)

a. count-controlled loop.
b. uncontrolled loop.
c. condition-controlled loop.
d. DO loop.
e. both a and d.

E 5. The documentation package for a computer program should include

a. instruction on how to run or use the program and a description of what the program does.
b. description of the input and output files.
c. a flowchart and a program listing.
d. the variable names used in the program and a copy of the test data used with the results.
e. all of the above.

B 6. The STOP statement

a. is a nonexecutable statement.
b. causes the computer to terminate running the current program and allows it to proceed to the next program.
c. indicates to the compiler that the entire program has been read and that translation may proceed.
d. must come at the physical end of each program.

A 7. Which of the following statements contain an error?

a. DØ 26 I=J,K,X
b. IF(X+2..EQ.Y-2.) GØ TØ 20
c. DØ 30 J=1,LAX
d. DØ 40 M=20,45,11
e. none of the above

A 8. Debugging is

a. the process of detecting and correcting errors in your program.
b. the process of translating a FORTRAN program into a machine language program.
c. defining the data that a FORTRAN program can use.
d. the method used to collect the data that will be used by your program.
e. none of the above.

C 9. The format specification used to print the variable TØT whose value is 44226.1 is F7.2. What kind of output will be printed for this specific data field?

a. 44226.10
b. XXXXXXX
c. *******
d. IIIIIII

A 10. Diagnostic error messages provided by the compiler

a. result from FORTRAN syntax errors that make it impossible to translate the program into a workable computer program.
b. result when the network of decisions in the program does not properly isolate the conditions that may arise.
c. indicate that test data should be used to find the source of the error.
d. result from a mistake in the deductive reasoning process used to design the program.

The following question is worth 8 points.

11. Consider the array ALPHA dimensioned with 7 elements:

ALPHA:	-2.7	-10.0	6.5	8.2	-4.4	1.0	7.7

a. What statement is necessary to reserve memory space in the computer for the array ALPHA?

DIMENSION ALPHA (7) 3 pts.

b. If L=3, specify the value of each of the following array elements:

1) ALPHA(L) = 6.5
2) ALPHA(L+5) = undefined
3) ALPHA(2*L-1) = -4.4
4) ALPHA(6-L) = not allowed

1.5 pts each (round up)

1 pt for decimal error

The following questions are worth 4 points each.
In each of the following questions specify the value of each variable indicated after execution of the set of commands.

12.
```
    A=10.
    DØ 10 J=5,10
10  A=A+10.
```

J= undefined 2pt

A= 70. 2pt

13.
```
    K=0
    DØ 40 L=1,3
    DØ 40 M=2,5,3
40  K=K+L+M
```

K= 33 4pt

14.
```
    KAT=0
    DØ 20 L=2,8,2
20  KAT=KAT+L
```

KAT= 20 2 pt

L= undefined 2 pt

15.
```
    NEW=10
    DØ 30 M=4,12,3
    NEW=NEW+M
    IF(NEW.GE.30) GØ TØ 40
30  CØNTINUE
40  ----
```

NEW= 31 2pt

M= 10 2 pt

No partial credit except as noted.

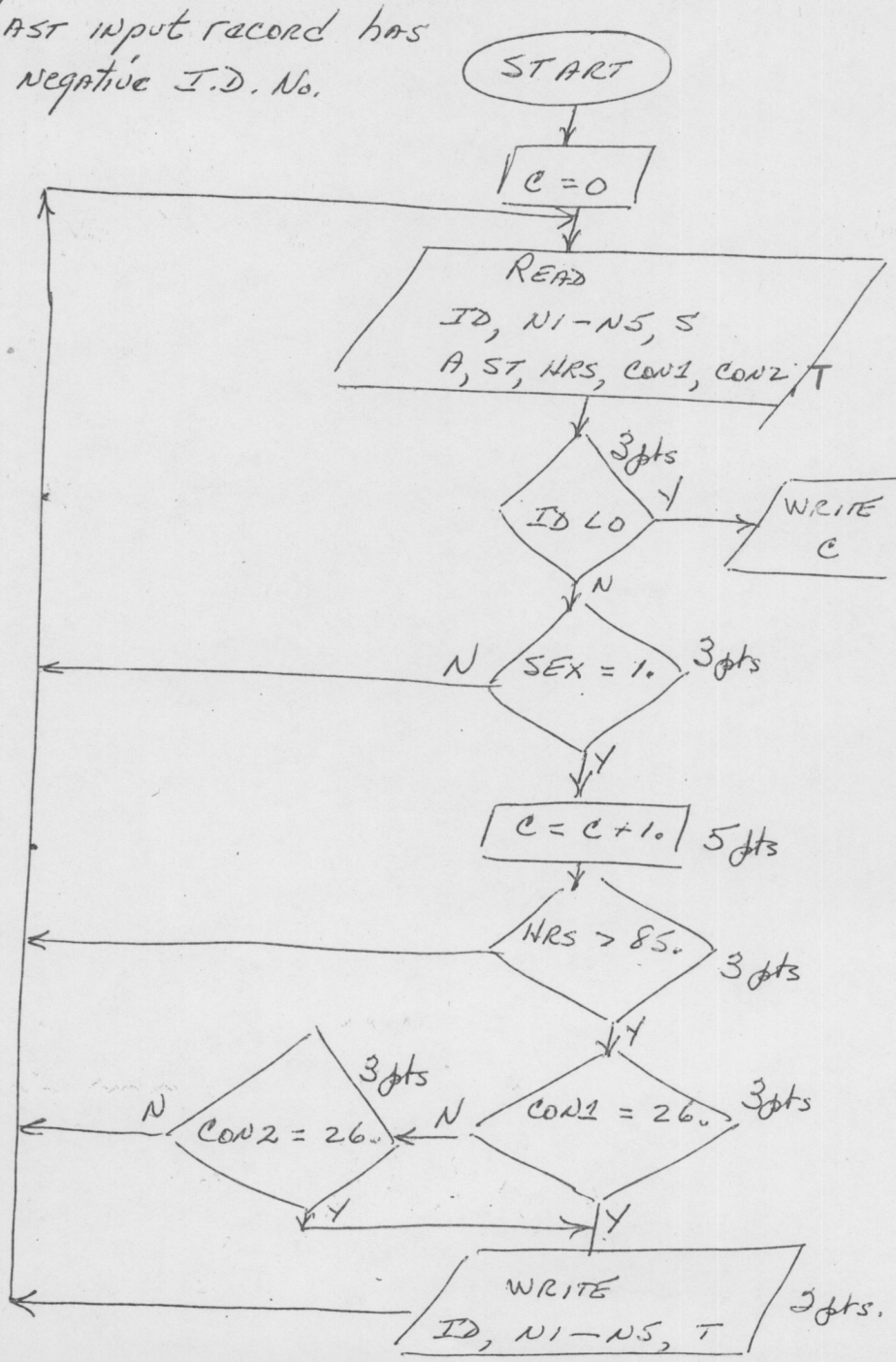
30 pts) 16. Given the following input:

Card Column	Description
1-9	I.D. No.
10-37	Name
38	Sex
39-40	Age
41-42	State Code
43-45	Hours Completed
46-47	Concentration Code
48-49	Second Concentration Code
50-59	Telephone No.

2 pts / computation
2 pts / input - output
3 pts / decision
5 pts / C count box out of order
5 pts / second concentration box out of order

Prepare a detailed flowchart to represent the program that would produce a list of senior (at least 86 hours completed) males (sex code 1) with a concentration in Business (code 26 in either columns 46-47 or 48-49). Each line should include I.D. number, name, and telephone number. Also, you are to print the number of males.

* Last input record has a negative I.D. No.



1 pt.
2 pts
2 pts / 1 missing name variables
3 pts
2 pts
1 pt
3 pts
5 pts
3 pts
3 pts
3 pts
3 pts
3 pts.

All points lost for incorrect path.

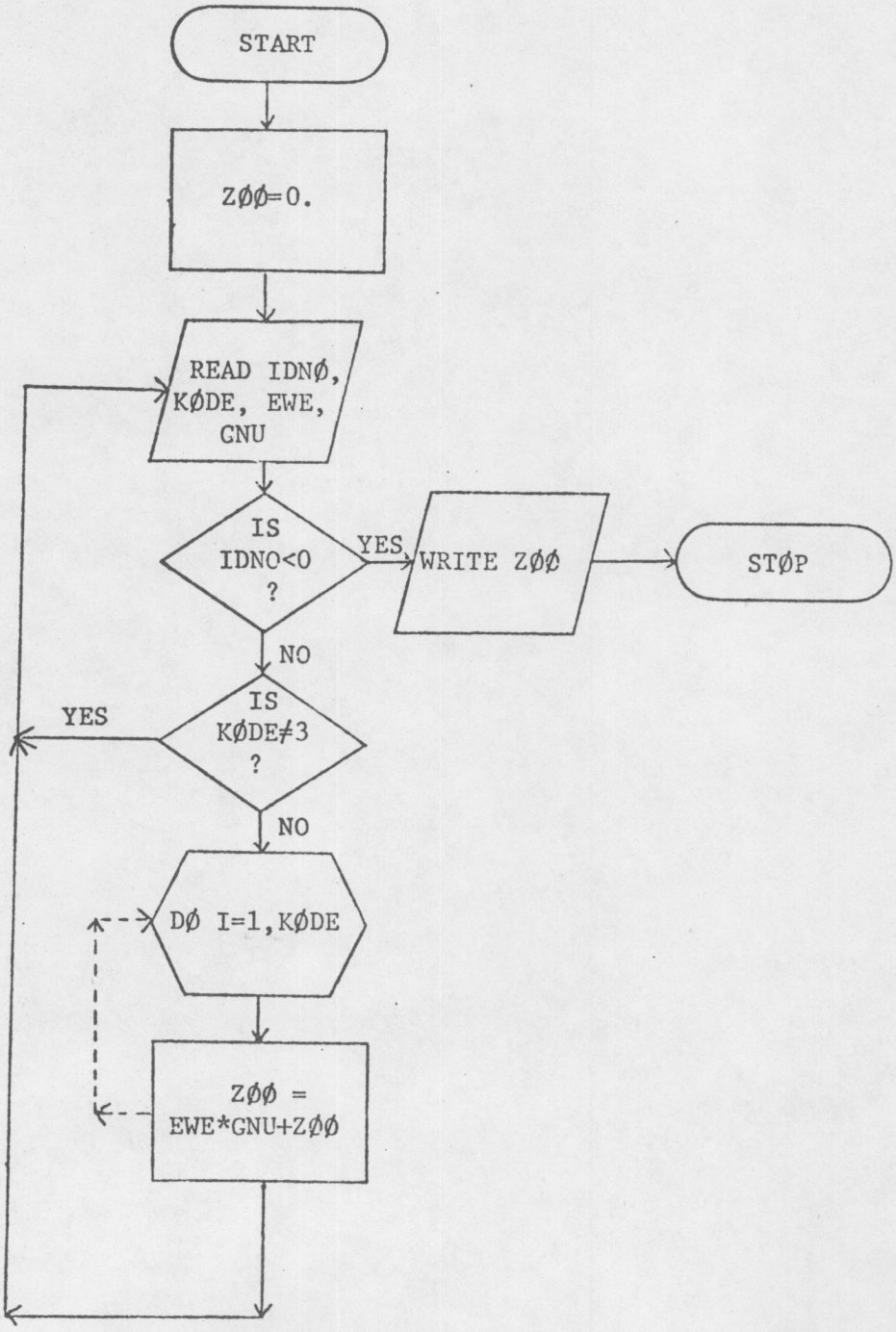
3 points off for missing line

(16 pts) 17. Consider input cards with the following layout:

1 pt / statement
2 pt for each format
2 pt for GO TO after CONTINUE

Card Column	Variable Name
1-5	IDNØ (integer)
6	KØDE
10-13	EWE ($XXX_{\wedge}X$)
18-19	GNU ($X_{\wedge}X$)

The following flowchart computes a value ZØØ which is to be printed at the top of a new page in the following form: THE VALUE OF ZØØ = XXXXX.XX (with the X's replaced by the value). On the coding form provided, write a complete FORTRAN program to implement this flowchart.



NAME: PROJECT #: CARD COLOR: PAGE ___ OF ___ PAGES

DECK ID: DATE: TRANSCRIBED BY:

C FOR COMMENT

No partial credit within a statement or group of statements.

STATEMENT NUMBER (1–5)	Cont. (6)	FORTRAN STATEMENT (7–72)		ID NUMBER (75–80)
		ZQQ=0.0	1 pt	
90		READ(5,1) INDQ, KODE, EWE, GNU	} 2 pts.	
1		FORMAT(I5, I1, 3X, F4.1, 4X, F2.1)	}	
		IF(INDQ.LT.0) GO TO 900	1 pt	
		IF(KODE.NE.3) GO TO 90	1 pt	
		DO 91 I=1, KODE	3 pts.	
		ZQQ = EWE * GNU + ZQQ	1 pt	
91		CONTINUE	1 pt	
		GO TO 90	3 pts.	
900		WRITE(6,2) ZQQ	} 2 pts.	
2		FORMAT('1', 'THE VALUE OF ZQQ = ', F8.2)	}	
		STOP	} 1 pts.	
		END	}	