University of Baghdad
College of Engineering
Civil Engineering Department

برمجة ١

Programming

First Year Class
Date: 20 June, 2013
Time: 3 Hours
First Attempt

NOTE: ATTEMPT FIVE QUESTIONS ONLY

Q1. a) Write a program to read students' marks, then find the numbers of marks ranged between (60-69), (70-79), (80-89) and (90-100), using SELECT CASE statement.
The marks are: [50, 40, 90, 95, 87, 70, 76, 65, 63, 100, 55, 30, 81, 93, 88, 72, 79, 66, 68 and 51].

Q1. b) Write a program to compute the following series:

$$Y = 1 + \frac{1+x}{2!} - \frac{1+x+x^2}{3!} + \frac{1+x+x^2+x^3}{4!} - \cdots \ldots\ldots\ldots\ldots$$

(The program must be terminated when the last term is less than 0.001 using DO LOOP statement).

Q2. Write a program to input two dimensional array A(N, M), then re-arrange each row in ascending sort and save it in new array B(N, M).

Q3. a) Write a program to find the value of (Y):

$$Y = \sum_{K=1}^{7} \sum_{J=5}^{20} \frac{5 + (K^2)!}{K + (XJ)!}$$

Q3. b) Write the output for the execution of the following program:

```
Rem Test Program
N=7
FOR I=1 to N
READ X
If INT(X/2) =(X/2) AND X MOD 3=0 THEN S=S+X
NEXT
PRINT "S=";S
DATA 1, 3, 4, 6, 8, 9, 12
```

Q4. a) Write a program to input the array A (N), multiply each odd number by 3 and each even number by 2, and then print out the final array.

Q4. b) Write a program to calculate the following:

P1=x1 * x2 * x3 * x4 * x5
P2=x6 * x7 * x8 * x9 * x10
.
P10=x46 * x47 * x48 * x49 * x50
Where: x1=1, x2=2, ..., x50=50.

NOTE: **P** is not an array.

Q5.a) Write a program to generate the following array without using any input statement.

1	2	3	4	5
3	6	9	12	15
5	10	15	20	25
7	14	21	28	35
9	18	27	36	45

Q5. b) Write a program to read the array A (15), remove all zeros from the array A (15) and print out the new array.

Q6. a) Write a program to generate the array A (10), where each element of this array is equal to factorial of its position.
Example: A (4) =4*3*2*1, A (8) =8*7*6 ....*3*2*1.

Q6. b) Write the output for the execution of the following program:

```
READ A$, B$
D = LEN (A$)
DATA AHMED, ALI SAAD
FOR I = 1 TO D
IF MID$(B$, I, 1) = " " THEN
C$ = LEFT$(B$, I-1)
F$ = RIGHT$(A$, I)
D$= LEFT$(B$, I)
END IF
NEXT
A$ = F$+ D$ + C$
PRINT A$
```

الحلول النموذجية للأسئلة البرمجية / الفصل الأول لعام 2012/2013

المرحلة الأولى

Q1.a)

```
for i=1 to 20
read x
select case x
case 90 to 100
K=K+1
Case 80 to 89
M=M+1
Case 70 to 79
S=S+1
Case 60 to 69
N=N+1
End Select
data 60, 40, 90, -----
print K, M, S, N
end
```

Q1.b)

```
input x
K=1+x : S=1 : I=1 : Y=1 : N=2

Do
F=1
for j=1 to N
 F=F*j
next
C=K/F
y=y+S*C
S=-S
N=N+1
I=I+1
K=K+x^I
```

Q2.

```
input N, M
Dim A(N,M) , B(N,M)
for i=1 to N
for j=1 to M
input A(i,j)
B(i,j) = A(i,j)
next: next
for i=1 to N
for j=1 to M-1
for K=j+1 to M
if B(i,j) > B(i,K) then swap B(i,j) , B(i,K)
next: next: next
for i=1 to N
for j=1 to M
print B(i,j);
next: print: next
end
```

Q3.a)

```
input x

for K=1 to 7
    F1 = 1
    for j1 = 1 to K*K
        F1 = F1*j1
    next
    for j = 5 to 20
        F2 = 1
        for j2=1 to x*j
            F2 = F2*j2
        next
        y = y + (5 + F1)/(K+F2)
    next
next
print y
end
```

Q3.b)

S = 18

Q4.a)

```
input N
Dim A(N)
for i=1 to N
input A(i)
next
for i=1 to N
if A(i)/2 = int(a(i)/2) then
a(i) = a(i)*2
else
a(i) = a(i)*3
endif
for i=1 to N
print A(i)
next
end
```

Q4.b)

```
for i=1 to 10
x = x + 1
P = 1
for j=1 to 5
P = P * 5
next
print P
next
end
```

Q5.a)

```
Dim A(5,5)
for i=1 to 5
for j=1 to 5
A(i,j)= (2*i-1)*j
next : next
for i=1 to 5
for j=1 to 5
print A(i,j);
next : print : next
```

Q6.a)

```
Dim A(10)
for i=1 to 10
F=1
for j=1 to i
F=F*j
next
A(i)=F
next
for j=1 to 10
print A(i)
next
```

Q5.b)

```
Dim A(15), B(15)
for i=1 to 15
input A(i)
next
K=0
for i=1 to 15
if A(i)= 0 then 10
K= K+1
B(K)=A(i)
10 next
for i=1 to K
print B(i)
next
```

Q6.b)

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