



Term Exam

Computer Programming

Computer and Syst. Dept.
Time Allowed: 2 hrs.
Prep. Students.
Total Marks: 50.
No. of papers: 2
No. of Questions: 4



Solve the following:

Question 1

يسمح باستخدام القلم الرصاص (شرط وضوح الخط).

الامتحان في ورقتين.

(a) show how the computer executes the following expressions:

- $F = 5 * ((7 + 3) * 4^2 + 3) / (2 + 4 * 3) - 5$.
- $F = 16 - (17 \bmod 3) ^ 2 / 2 + 4$
- $F = 5 * ((7 + 3) * 4) / 2 + 4$

6 Marks

(b) Write a program to enter the student degrees in 10 subjects, then print his grade, the user is not allowed to enter wrong degree.

Percentage	Grade
$50 > \text{Percentage}$	Fail
$50 \leq \text{Percentage} < 65$	Pass
$65 \leq \text{Percentage} < 75$	Good
$75 \leq \text{Percentage} < 85$	Very Good
$85 \leq \text{Percentage}$	Excellent

5 marks

Question 2

(a) Write a program to calculate the final price of a TV according its type and size after applying a discount and adding a transportation cost تكاليف النقل. There are two types of TVs as shown in the following table. The program should accept the TV price before discount, TV size, and TV type. Then prints the TV final price. The user is not allowed to enter wrong type.

8 Marks

Type	Size	Discount	Transportation cost
1	$20 > \text{size}$	3%	10 \$
	$20 \leq \text{size} < 30$	5%	15 \$
	$30 \leq \text{size}$	7%	20 \$
2	$20 > \text{size}$	10%	22 \$
	$20 \leq \text{size} < 30$	12%	25 \$
	$30 \leq \text{size}$	15%	40 \$

(b) list the errors in the following segment of code:

2 Marks

```
Dim X, Y, Z, i as integer
X=4.5
Y=Inputbox(Enter the Value)
Z=X+Y
For i=1 to 10 step -2
Console.WriteLine(i)
next
```

Question 3

Write a programs to:

- Enter 10 numbers, then print the sum of the two maximum numbers.
- Calculate the factorial of a number.
- Print the sum of even numbers that are divisible by 3 between 0 and 100.
- Enter the values of a, b, and c for the equation $aX^2 + bX + c = 0$, then print its roots (assuming the equation has two real roots).
- Enter the value of n, then calculate 2^n using for loop.

15 Marks

Question 4

- (a) Write the code for the simulator show I figure 1, which simulates the shown electrical circuit, you should enter the values of R1, R2, R3, V, and the state of the switch S, then the simulator shows the values of the currents I1, I2, and I3.

6 Marks

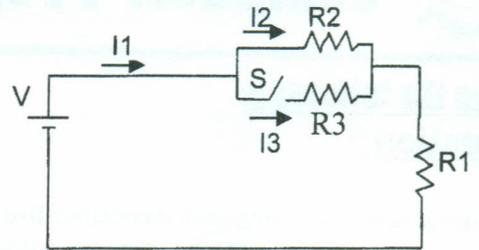


Figure 1

- (b) Write a program to accept the worker type, work hours, absent days, then calculate the net salary using the following table:

Type	Hour price	Over	Decrement per absent day	Tax
1	10 \$	100 \$	5 \$	3 %
2	20 \$	200 \$	7 \$	5 %
3	30 \$	300 \$	10 \$	7 %

As shown in figure 2, If the work hours exceeds 40 to 60, extra hours will have price 1.5 as normal hours. If hours exceeds 60, extra hours (than 60) will have price as twice as normal hours.

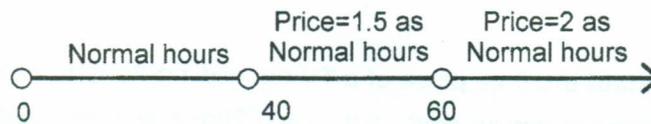


Figure 2

8 marks

----- End of Questions -----

With Best Wishes

**Staff of Computer and Control
Systems Department.**