Université Libanaise
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الجامعـة اللبنانيـة
كلية الاعلام
الفرع الاول

الامتحانات النهائية الدورة الاولى – للفصل الاول
من العام الجامعي 2022-2023

المرحلة: الاجازة- فصل الاول
السنة المنهجية: 2022-2023
الاختصاص: علم البيانات

المادة: مبادئ البرمجة
المدة: ساعتين
الأستاذ: د. يوسف الاتات

Question 1:

Write a program that reads an integer number x ($x > 0$) and an integer number y (y>0) from the user, then displays the value of the following sum:

$$s = 1 + x^2 + 2x^3 + 3x^4 + \cdots.$$

The program stops when the value of s becomes >=y. The program must then display the value of s.

Question 2:

Write a program that reads an integer n form the user such that ($1 \le n < 10$). This program must calculate and display the sum s of n terms: s= 11+22+33+...+nn.

Example: for n=3, s=11+22+33

for n=4, s=11+22+33+44

Question 3:

Write a program that reads an integer n>0 form the user and displays a figure of Z stars having n as height and n as width. For example for **n=5**, the program must display:

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*****
_ _ _*
_ _*
_*
*****
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Question 4:

Write a program in C that:

a) Declares a matrix of integers M[6][6] and fills the elements of M such that: the elements of the main diagonal must be 0 and the other elements must be strictly positive.

b) Displays the position (i,j) of the maximum of each line.

c) Displays all the elements of the matrix M that end by 7 (ex: 7, 17, 27, …).

Question 5:

Write a C program that:

a) Declares an array of integers A[20].

b) Fills the elements of the array A by strictly positive numbers.

c) Displays all the elements of the array A which are powers of 2 (ex : 2, 4, 8, 16, …).

Good Luck