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Computer Science + 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

	DEPARTMENT OF MATHEMATICS TANTA UNIVERSITY FACULTY OF SCIENCE (Computer Science Division)			
	EXAMINATION FOR PROSPECTIVE STUDENTS (2ND YEAR)			
	COURSE TITLE: معالجة الملفات		COURSE CODE: CS2105	
DATE: 05-01-2017	JAN 2017	TERM: 1	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Solve the following Questions

Question 1: (30 Marks)

- a- Compare between physical and logical files?
- b- Mention in brief types of allocation methods?
- c- Why do we need files to be stored on secondary storage devices?

Question 2: (30 Marks)

- a- List the actions which are carried out when a disk read is requested?
- b- We have a fixed-length records (number of records = 2000, size of record = 512B, sector size = 512B, sector/track = 60, track/cylinder = 16) How many track and cylinders are needed?

Question 3: (30 Marks)

- a- Define the following terms Cluster and Extent ?
- b- Disk characteristics or specifications (20 platters, 100 track/surface, 200 sector/track, sector size = 512 byte, average seek time = 50 msec, R.T.=250 msec) compute the access time with randomly access and sequential access in both sector and cluster organizations?(cluster consists 5sectors)

Question 4: (30 Marks)

- a- Why we need data compression?
- b- Let $A = \{a/11, b/20, c/5, d/55, e/45\}$ be the alphabet and its frequency distribution. Find the Huffman code for this alphabet.

Question 5: (30 Marks)

- a. List the placement strategies for new records?
- b. What are the basic operations on indexes?
- c. List the two main alternative of indexing?

With best regards



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EXAMINATION FOR PROSPECTIVE STUDENTS (2ND YEAR)

COURSE TITLE: برمجة حاسب

DATE: 10/1/2017

COURSE CODE: CS2103

Question 1:

- Describe the three main components of any Function? Describe the differences between functions and Macros? Define a macro called "birthday" which describes the day of the month upon which your birthday falls.
- Write a program to swap two numbers using a function?
- Can you change the known names of data types of variables? Explain by an example?

Question 2:

- What is the definition of structure, write its form? What is the difference between Structure and Union? Define the array of structures?
- Create an array of a student structure. Each structure has 2 members, roll_no and names with 20 characters? Write a program that enters the values of the members and then print out these values on the screen?
- Explain the meaning of each of the following: #define Max 25; float f=23.4 num = (int)f; #define Cube(a) a*a*a.


Question 3:

- What is the definition of a pointer? What is the relation between pointers and arrays? What do the symbols * and & mean, when they are placed in front of an identifier? Why is it incorrect to declare: float *number = 2.65; ?
- Write a program to add two numbers using pointers?
- What is the output of this C code?

```
1. #include <stdio.h>
2. int main()
3. { int *ptr, a = 10;
4.   ptr = &a;
5.   *ptr += 1;
6.   printf("%d,%d/n", *ptr, a); }
```

Question 4:

- What is the definition of an array? What is the difference between array and variables? Write a program for finding the largest element and average of an integer array?
- Write a program that concatenates two string arrays then calculates the size of new array?
- How to describe the two dimensional array, Give an example? How to initialize the two dimension array by characters?

	جامعة طنطا كلية العلوم قسم الرياضيات		
	امتحان الطلاب المستجدين - المستوى الثاني - شعبة احصاء		
اسم المقرر: احصاء تطبيقي	الدرجة الكلية للامتحان: ١٠٠ درجة	الفصل الدراسي: الاول	كود المقرر: ST2107
زمن الامتحان: ساعتان	التاريخ: ٢٠١٧-١-١٧		

أجب عن الأسئلة الآتية :

السؤال الأول (10, 8, 15)

(أ) عرف ما يلي : البيانات الوصفية- مركز الفنة- نصف المدى الربيعي - مقياس التفرطح - معامل ارتباط الرتب .

(ب) لأي عددين a, b أثبت أن $H \leq G \leq \bar{X}$

(ج) عينتان X, Y اخذتا من مجتمعين و تم الحصول على النتائج الآتية

العينة الثانية	العينة الاولى
$\sum_{i=1}^{30} Y_i = 25$	$\sum_{i=1}^{25} X_i = 20$
$\sum_{i=1}^{30} Y_i^2 = 1500$	$\sum_{i=1}^{25} X_i^2 = 1000$

احسب الوسط الحسابي و معامل الاختلاف لكل عينة وأي العينتين اكثر تشتتا ؟

السؤال الثاني (5, 25)

(أ) احسب المنوال و الانحراف المتوسط و مقياس الالتواء للبيانات التالية والتي توضح أطوال مجموعة من النخيل

فئات الطول	0 -	4 -	8 -	12 -	16 -	20 - 24
عدد النخيل	5	12	7	9	11	6

(ب) ارسم المدرج التكراري للبيانات السابقة.

السؤال الثالث (5, 10, 4, 18)

نفرض أن Y ناتج تفاعل كيميائي معين و X مستويات محددة من درجات الحرارة و كانت النتائج كالاتي:

X_i درجة الحرارة	10	15	20	25	30
Y_i ناتج التفاعل	4	6	5	7	8

(أ) أوجد معادلة خط انحدار Y على X

(ب) قدر ناتج التفاعل الكيميائي عندما تكون درجة الحرارة 45 درجة مئوية. (ج) أوجد معامل الارتباط بين X, Y .

(د) أوجد معامل التحديد. وهل درجة الحرارة هي المؤثر الوحيد على ناتج التفاعل الكيميائي؟ وضح اجابتك.