COLLEGE OF ENGINEERING & TECHNOLOGY

Department : Computer Engineering (Cairo Branch)

Lecturer : All Course Lecturers

Course Name : Introduction to Computers

Course Code : CC 111   Total Marks: 40

Date   : 2-01-2019   Start Time: 12 pm   Time allowed : 2 Hours

Final Examination Paper

All types of calculators are not allowed

Answer the following questions:

Question 1   (10 Marks)

Choose the correct answer

1. Which of the following is true about Random Access Memory (RAM)?
   a. It is slower than disk storage.
   b. A computer can locate programs and data directly in it by using addresses.
   c. It can be read but not written on under most circumstances.
   d. Non-volatile type of memory.

2. .... Performs arithmetic involving decimal operations
   a. ALU
   b. FPU
   c. CU
   d. Decode unit

3. Which of the following is a high-speed memory built into the CPU
   a. RAM
   b. ROM
   c. Registers
   d. Flash memory

4. 8 G-bytes of data is :
   a. 2^{13} Megabyte.
   b. 2^{33} kilobyte.
   c. 2^{23} Bytes.
   d. None of the above

5. The order of the steps of one machine cycle is as follow
   a. Fetch, Execute, Store, and Decode
   b. Execute, Fetch, Store, and Decode
   c. Fetch, Decode, Execute, and Store
   d. Decode, Store, Fetch and Execute

6. A ____ is an object that allows you to select specific information from a database.
   a. Query
   b. Form
   c. Report
   d. Relation

7. Application software that allows the creation and manipulation of an electronic database
   a. Database Administrator (DBA)
   b. Database Management System (DBMS)
   c. File processing system
   d. b & c

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8. A Program that enables an operating system to communicate with a specific hardware device is the -----
   a. Device Driver
   b. application program
   c. Utility program
   d. Network program

9. Multi-tasking within the same running program instance is called
   a. parallel processing
   b. multi-user
   c. multi-threading
   d. a & b

10. In .... each CPU (or core) typically works on a different job. Used with personal computers with multi-core processors.
    a. Multi-threading.
    b. Multi-tasking.
    c. Parallel processing.
    d. Multi-processing

Question 2   (5 Marks)

Match the terms in column I with its definition in column II

Term	Definition
1) Logic Error 2) Runtime Error 3) Virtual memory 4) RAM 5) ASCII 6) UNICODE 7) Cache memory 8) Syntax Error 9) Virtual Disk 10) Super Computer 11) Analysis Phase 12) Testing phase	a) Universal coding standard (32 bits) designed to represent text-based data written in any ancient or modern language. b) A special type of very fast memory chips that is used to store frequently used data. c) A memory-management technique that uses hard drive space as additional RAM. d) The type of errors which occur when the programmer has not followed the rules of the programming language. e) Program Development Life Cycle phased used in which developers understand the functions the software must perform.

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Question 3   (5 Marks)

Perform the following number systems conversions. <u>Show all your calculations.</u>

- $(18)_{10} = (\quad ? \quad)_2$

- $(123)_8 = (\quad ? \quad)_{10}$

- $(11110)_2 = (\quad ? \quad)_{10}$

- $(AC)_{16} = (\quad ? \quad)_{10}$

- $(2D6)_{16} = (\quad ? \quad)_2 = (\quad ? \quad)_8$

Question 4   (5 Marks)

Draw a flowchart which calculates the net salary of a salesman. The salesman salary is calculated as follows:
Base salary value (BS) in addition to bonus value (B) minus tax (T).

$$NS = BS + B - T$$

The bonus value (B) is identified according to the following table.

Sales achieved (SA)	SA < 1000	$1000 \leq SA \leq 10{,}000$	SA >10,000
Bonus in Egy Pounds	300 L.E.	1000 L.E.	2000 L.E

The tax (T) value is calculated as a percentage from (**BS + B**) amount.

Question 5   10 Marks)

a) Trace the following python code and identify its output .

```
num = 4
res = 1
if num == 0:
  print("The result is 1")
else:
  for i in range(1,num + 1):
    res = res*i
  print("The res is ",res)
```

```
x = 30
if x <= 15 :
  y = x + 15
elif x <= 30 :
  y = x + 30
else :
  y = x
print "y = ", y
```

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b) Write a complete Python program which calculates the following series.

$$S = x + \frac{x^3}{3} + \frac{x^5}{5} + \cdots + \frac{x^N}{N}$$

Assume odd values for N

Question 6 (HTML)   5 Marks)

Write the appropriate HTML tags including unordered list which implements the following web page. **Do not use CSS code, use HTML tags only!!**