74

Birzeit University
Computer Science dept.

Comp 131 Midterm Exam

First semester 2016-2017

Introduction to Computers and Computing Ethics   Time:75min

Name _____ Id _____ Section 3

Instructors

Dr. Nariman Ammar   Section 1

Mr. Abdallha Karakra   Section 4

Mr. Hafith barghothi   Section 3 (MW 8:00-9:00)

Section 2 (MW 10:00-11:00)

Section 5 (MW 11:00-12:00)

Question #1: (34 points)

A(30%)

Select the best answer for each of the following question (1-10):

1) The following are all CPU components except:

   (A) RAM   B) CU   C) Registers   D) ALU

* 2) The following are all computer output devices except (ما عدا):

   (A) Scanner   B) Speaker   C) Printer   D) Monitor

3) $(21)_6 = ($ _____ $)_8$ 13   15

   A)51   B)17   (C)15   D)None of the above.

   1 4 2
   01 00 0 0 0

4) 62 in Hexadecimal (base 16) equals in Octal (base 8) the value.

   (A)142   B)144   C)241   D)None of the above.

$127 - 4 = 123$

$1 * 2^{-4}$

0101.0001

$2 * 0.0625 \quad 0.125$
$0.125 \quad 0.25$
$0.25 \quad 0.5$
$0.5 \quad 1.0$

0.0625

5) The exponent part of the floating point representation for the number 0.03125 is :

A) 01111001   B) 01111011   C) 00101111   D) 01111010

6) Using 8 bits to represent an integer, the 2's complement representation of the integer (-15) is:

A) 11110001   B) 00001111   C) 11110000   D) 11110010

7) $(223311)_4 = ($ _____ $)_8$

A) 5635   B) 5536   C) 5365   D) None of the above.

8) A floating point representation is usually represented in memory using:

A) 4 bits   B) 2 bytes   C) 32 bits   D) None of the above.

9) Is considered as primary storage

A) RAM   B) CD   C) DVD   D) Hard Disk

10) Which of the following MS Excel formulas is used to calculate the maximum value for numbers in range D2:G2

A) max(D2-G2)   B) max (D2.G2)   C) =maximum(D2:G2)   D) None of the above

Answer sheet for question 1

1	2	3	4	5	6	7	8	9	10
A	A	C	A	B	A	C	C	A	C

B) (4%)

Explain the four steps of the CPU machine cycle briefly

1) Fetch
2) decode
3) excute
4) store

Question #2: (25 points)

A) (15%) Using two's complement with 8 bits representation, solve the following (show your work):

$(3B)_{16} - (28)_9 = (\ 10000 1 \ )_2$

$(00111011)_2$

$8 + 2*9 = 8 + 18 = (26)_{10}$

$= (00011010)_2 \xrightarrow{ one's\ com} (11100101) \xrightarrow{Two's\ com} (11100110)_2$

$(00111011)_2 +$
$(11100110)_2$
_____
00100001

B) (10%) Represent the float value (-35.125)$_{10}$ in memory. (Show your work)

$100011.001 \cdot 001$ $1.00011001 * 2^5$

```
2 35
  17  1          2*.125   0.25        5 +127 = 132
   8  1                   0.5                   66   0
   4  0                   1.0                   33   0
   2  0                                         16   1
   1  0                                          8   0
   0  1                                          9   0
                                                 2   0
                                                 1   0
                                                 0   1
```
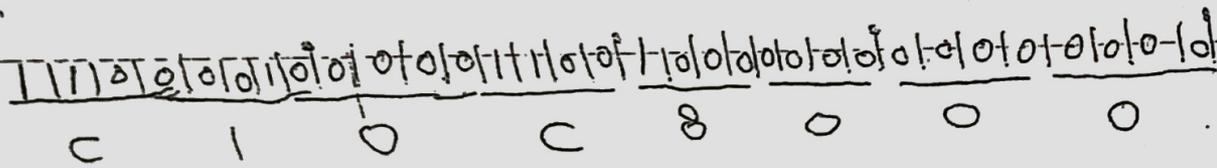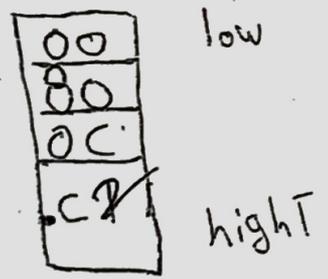
1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

C   1   0   C   8   0   0   0

```
A  1010
B  1011
C  1100
D
E
```

00	low
00	
0C	
C8	high

Question #3: (20 points)

Write an algorithm (*pseudo code*) that keeps reading the salaries of employees رواتب
(one salary at a time) until a salary of *0* is entered by the user. A tax of 8 percent
(8%) should be deducted (يتم خصمها) from each salary entered that exceeds (يزيد
على) 3000 Shekels. Your algorithm should print the *sum* of all the salaries that
were entered **both** before and after taxes were deducted.   while

1) start

~~2) Input The salaries and save as X~~

3) let sum equals Zero

4) let sum with TaxT equals Zero

4) input The salaries and save as X

5) while X not equals Zero

let sum equals The old sum added X

if X is greater Than Three Thausant Then

let Tax equals ~~....~~ eighT persent mulTiely X

let y equals X ~~....~~ (minus) divinning Tax

let sum with TaxT equals The old sum with TaxT added y

Else

let sum with TaxT equals The old sum with TaxT added X

End if

End while

6) print sum , sum with TaxT

7) End

Question #4: (21 points)

A) (9%)

Clearly explain the difference between the following pairs of terms:

i) HTML vs HTTP:

HTTp : it use it in The web Pages

HTML: iT usc To save presesition ﻣﻌﻠﻮﻣﺎﺕ

ii) Transport Layer vs Network Layer:

TransporT layer: it use it To Trans port packet from computer To other

NeTwork layer: it use it To connect The computers TogeTher

iii) Markup Language vs Programming Language:

Programming language it use it To TransleTe owr language To program

MarKup language it use it To TransleTe Program To computer language

B) (6%)

Define the following terms giving an example of each:

LAN: in Two buildings like B2U net — 1

Protocol : ⬤ .com , .edu — 3

C) 6%

What do each of the following acronyms stand for:

TCP: Transformes   ProTocol FTP: _____ proTo col