



Kafrelsheikh University
Faculty of Computers & Information

Mathematics I

The first semester exam (2016-2017)

Time: 3 Hours

First year

Date : 4-1-2017

Answer the following questions

1- (a) Let $f(x) = \frac{2x+1}{x^2+1}$. Find the range of $f(x)$.

(b) If $f(x) = \frac{1}{x^2-2x-3}$. Find the domain of f .

2- Let $f(x) = 2x^3 + 1$. Find the inverse of f .

(b) Let $f(x) = x^2 + 3$. Find $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$

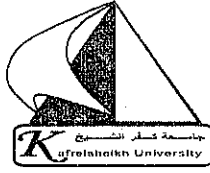
4-(a) let $y = \frac{2x^2-3}{\sqrt{x}}$ find $\frac{dy}{dx}$.

(b) Let $f(x) = x^2(1-2x)$ find $f''(a)$ for the given $a = 2$.

5- (a). Find the integral $\int (x^2 - 5x + 1)(2 - 3x) dx$

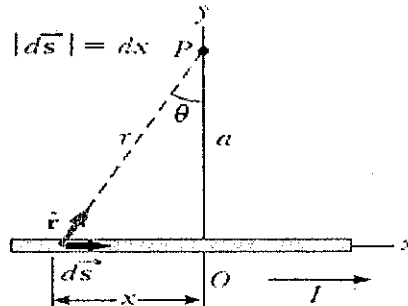
(b) A particle moves along a line so that its velocity at time t is $v(t) = t^2 - t$.
Find the displacement of the particle during the time period $1 \leq t \leq 2$.

*With my best wished
Prof. Dr. Osama Abo-Seida*

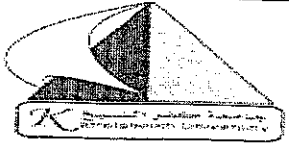


Answer The following Questions: (Each Question 10 Marks)

1. **Explain:** The polarization by Reflection and Brewster's Law?
2. **Deduce** the Magnetic Field Due to a Current in a Long Straight Wire at point P?



3. **Write short notes about:** Time Dilation, and Length Contraction according to Special Theory of Relativity?
4. (a) **Compare between** Insulators, Conductors, and Semiconductors?
(b) **Define:** The barrier potential and Einstein's Postulates in relativity theory?
5. **Write about:** Meissner Effect, and two type of superconducting materials?
6. **Explain:** the three models (Approximations) of Diode?

Faculty of Computers & Information	Year 2016-2017	
	First - term Exam First Level	
Computer Law(HUM141)	Date: 9/1/2017 2 Hours	


Answer the following questions

Q1. Put True (T) or False (F) and correct the false sentences(12 points)

1. Tertiary prevention is used after a crime has occurred in order to prevent successive incidents. ()
2. Cyber trespass involves two persons claiming for the same Domain Name. ()
3. Computer programs are protected by copyright and included in the Berne Convention. ()
4. Bonus software is a tool designed to record keystroke on an affected machine for later retrieval. ()
5. Industrial Property protects inventions and products ()
6. The antivirus monitors all data flowing in and out of the computer to the Internet and blocks attacks from reaching the system. ()

Q2. Give the scientific term for the following definition(18 points)

1. Monitors network traffic for suspicious activities and alerts the system or network administrator. (.....)
2. Using internet by individuals and groups to threaten the international governments or the citizens of a country. (.....)
3. A scheme that uses internet technology to present illegal solicitations to victims, to conduct financial transactions or to transmit the proceeds to others. (.....)
4. The selection and implementation of security controls to reduce risk to a level acceptable to management. (.....)
5. Establishing the validity of the identity claim of a person. (.....)
6. A branch of mathematics based on the transformation of data for protecting information and is used in security. (.....)

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Answer only Two questions of the following

Q3. (15 Points)

- 1- List five cybercrimes against society?(**5 points**)
- 2- Define Malware and give four examples of malicious software with brief explanation. **(10 points)**

Q4. (15 points)

- 1- Define crime prevention and discuss three strategies to prevent cyber crimes? **(10 points)**
- 2- What is the difference between Central Security and system level Programs? **(5 points)**

Q5. (15 points)

1. Define intellectual property and list five works protected by intellectual property?**(10 points)**
2. Give three conditions for passwords to be strong?**(5 points)**

مع تمنياتي بالنجاح والتوفيق

د/ منى جمال جعفر



Answer four questions only:

Question1:

(A) Mark the following sentences with True or False and correct the false ones: (10 degrees)

1. Digital communication is a dimmer switch with unlimited number of brightness settings. ()
2. Transistor appeared in the second generation of computer. ()
3. Calculating clock could perform multiplication and division operations. ()
4. Apple II had an intel4004 microprocessor. ()
5. File transfer protocol permits two computers to share files as peers. ()

(5 degree)

(B) Explain:

Intranets shielded themselves from the outside world by firewalls.

Question2:

Write the difference between:

(15 degrees)

1. Telephony and data communications evolution.
2. E-Commerce and E-Business.
3. LSI and VLSI.
4. Analogue and digital communications.
5. Pascaline and Leibniz calculator.

Question3:

(A) Write the scientific term:

(10 degrees)

1. A network architecture in which each computer or process is either a client or a server.
2. The science of communicating over a long distance using telephone, or PC technologies.
3. Sending information in small units, routed on different paths, and reconstructed at destination.
4. An operating system is designed to run on IBM-compatible computers, generally less expensive than Macintoshes.
5. Field of computer science in which computers exhibit some characteristics of human intelligence.

(5 degrees)

(B) Explain:

User revolution in computer software.

Question4:

(A) Write Short notes:

(5 degrees)

1. GS/OS.
2. Apple II.
3. ARPANET.
4. Military Network (MILNET).
5. Fiber optic Link Around the Globe (FLAG).

(B) Explain:

(10 degrees)

1. IT skills pyramid.
2. Hardware progression.

Question5:

(A) Define the following terms:

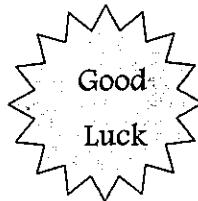
(10 degrees)

TCP/IP – Protocols – World Wide Web (WWW) – Internet Relay Chat (IRC) – Career cluster approach.

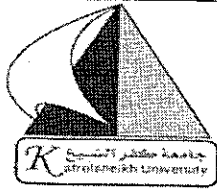
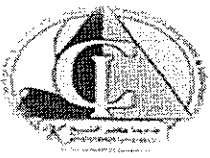
(B) Explain:

(5 degrees)

Charels Babbage and his innovation in computer history.



Dr. Diana Charvat Mosa

	<p align="center">Undergraduate Program Academic Year 2016/2017 Final IT Fundamentals IT 101 (60 marks) 2 Pages</p>	
<p align="center">Kafrelsheikh University</p>		<p align="center">College of Computers and Information</p>
<p>Date: 22/1/2017</p>		<p align="right">Time: 180 minutes</p>

Question number one: (20 Marks)

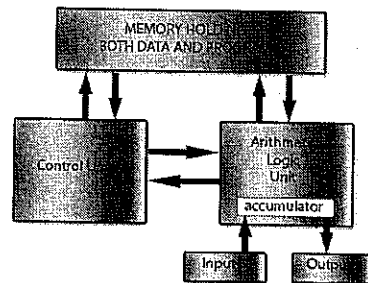
- a. What is meant by: Virtual Machines, Net-centric computing. (5 Marks)
- b. (5 Marks)

Find the storage size in bytes:	Find the ASCII code of the letters
<pre>using System; namespace DataTypeApplication { class Program { static void Main(string[] args) { Console.WriteLine(sizeof(double)); Console.WriteLine(sizeof(char)); Console.WriteLine(sizeof(float)); } } }</pre>	<pre>class Program { static void Main(string[] args) { char Capital_B='B'; char small_c='c'; int asci_B =Convert.ToInt32(letter); int asci_c =Convert.ToInt32(letter); Console.WriteLine(asci_B); Console.WriteLine(asci_c); } }</pre>

- c. Differentiate between: (10 Marks)
 1. Packed and Unpacked BCD.
 2. Time-Sharing and Distributed Systems.
 3. Symmetric and Asymmetric multiprocessing model
 4. CLI and GUI
 5. OSI and TCP/IP internet reference models.

Question number two: (40 Marks)

- a. Given the 'Stored-program' architecture: (7 Marks)



1. Indicate what are the arrows between components shows, and their types?
2. Discuss the essential features of the Von Neumann architecture?
3. State the drawback of Von Neumann and the solutions to this problem?

b. Choose the Most Correct Answer: (8 Marks)

- 1) Which of the following is used for dynamic memory allocation:
a. Stack, b. Heap, c. DDR3, d. a & b e. all true
 - 2) The leftshift operator of the number 00001000 is:
a. 2, b. 4, c. 8, d. 32 e. 64
 - 3) Uses 16 bits to represent each character represent a greater number of languages:
a. ASCII, b. Unicode, c. Coding have first 256 characters = ASCII, d. b&c
 - 4) Both of memory allocation types are stored in:
a. RAM, b. SRAM, c. DRAM, d. ROM e. Cache
 - 5) Used to synchronize the timing of hardware components:
a. CP, b. System Clock, c. Clock Pulse, d. a&c e. all true
 - 6) The process for reserving partial or complete portion of memory for the execution of programs and processes:
a. Memory Organization, b. Machine representation, c. Memory allocation,
 - 7) Means turning it into a representation that takes less space:
a. Data comprise, b. Data compression, c. Data representation,
 - 8) Which generation language does Assembly Language represent:
a. Third, b. Fourth, c. First, d. Second e. Fifth
 - 9) The domain name used for non-profit organization:
a. .com, b. .org, c. .gov, d. .net e. a&b
- c. Using MAR and MDR, write the required steps to: (5 Marks)
1. Load a location (A). 2. STORE a value (X) to a location (A).
- d. Discuss instruction format, then explain the Fetch- Execute life cycle. (5 Marks)
- e. Determine the generation for the following hardware technologies: (5 Marks)
1. Powerful servers and cluster computing.
 2. Transistors and magnetic tape.
 3. Vacuum tubes and punched cards.
 4. Personal and super computers based parallel processing.
- f. Find out the decimal values for the following: 347_8 (2 Marks)
- g. Convert the following number to binary: $35DF_{16}$ (2 Marks)
- h. If A is 01001000 and B is 10111000, find: (4 Marks)
1. A & B, 2. A || B, 3. A ^ B, 4. !A

Best Regards

Dr/Mai Ramadan



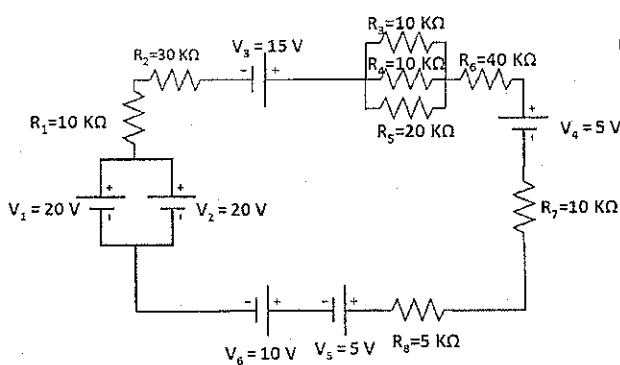
اسم المقرر : **Electronics**
الدرجة : **60 درجة**

إمتحان الفرقة : **الاولى حاسبات**
الزمن : **2 ساعة**

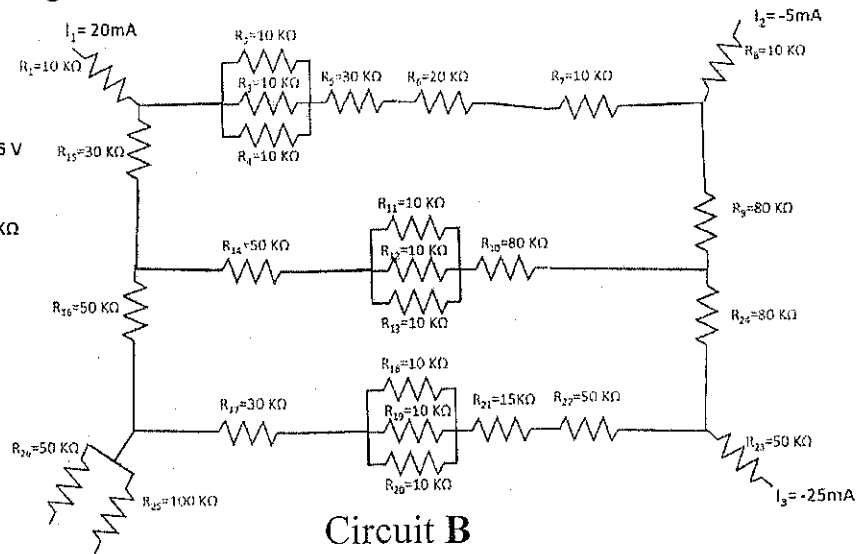
Answer the following questions

1. a) Using circuit A, Find the current in Resistor R_5 . **(7.5 degree)**

b) Using circuit B, Find the voltage across Resistor R_{25} . **(7.5 degree)**



Circuit A



Circuit B

2. a) Explain how the computer charger works. **(5 degree)**

b) Show how you can obtain 2 V from 1V. **(5 degree)**

3. What the difference between silicon rectifier (SCR), Triac, Diac, and Transistor? Showing the characteristic curve for each. **(10 degree)**

4. a) How transistor can be used as amplifier and in which mode. **(5 degree)**

b) How does Field effect transistor (FET) work? **(5 degree)**

5. What is the operational amplifier? Giving 8 applications of it. **(10 degree)**

6. Compare between: a) AND and NAND gates. b) OR, NOR, and XOR.

c) Set Reset RS and clocked RS flip-flops. **(5 degree)**

End of the test

With my best wishes

Dr. Mahmoud Saad



Answer the following questions:

I- Read the passage *carefully* and answer the questions below: (40 Marks)

Many companies have computerized their accounting procedures because computers can do the work more quickly and more accurately than people. The work the computer does (storing information, finding the right information and doing calculations) is called data processing. The part of the computer that processes the data (information) is called the CPU (central processing unit). This contains only electronic components, called microchips.

A computer can only do what it is instructed to do. The instructions that are stored in a computer are called the computer programme. The people who write these instructions and put them in the computer are called computer programmers. You do not have to be a computer programmer to use a computer. The parts of the computer that most people use are called terminals. The terminals are usually a keyboard, which looks like a typewriter, and a VDU (visual display unit), which looks like a television or a printer. Information put into the computer on the keyboard is called input.

When the computer shows the result of the data processing on the VDU or the printer, this is called output. When computers go wrong, it is usually because there is something wrong with the input. In other words, it is a mistake made by a person, not by the computer. This is sometimes called GIGO. *NB.* *Garbage* is the American word for the British *rubbish*.

- 1- How many sentences in the passage?
- 2- Give a suitable title for the whole passage.
- 3- What kind of abbreviation is CPU—initialism or acronym?
- 4- Is the 2nd paragraph written in British or American English?
- 5- Translate the last paragraph into Arabic.

II- Write the correct answer only:

(20 Marks)

- 1- English has (20-26-44) sounds.
- 2- There are (26-24-21) consonants.
- 3- There are (5-8-20) vowels in English.
- 4- The *ed* in *stopped* is pronounced as (t-d-id).
- 5- The *s* in *stomachs* is pronounced as (s-z-iz).
- 6- By next month he will be (age-aging-ageing) 44 years old.
- 7- He has a bad (habit-custom-tradition) of smoking cigarettes.
- 8- There is a (little-few-a little) milk in the fridge. We need to buy some more.
- 9- I was born (in-on-at) April.
- 10- Please, put the book (in-on-at) the shelf after you finish.

- 11- We have a meeting (in-on-at) 6 o'clock.
- 12- The train went (far-farther-further) than the bus.
- 13- I (convinced- persuaded-got) him to live with her mother.
- 14- I am very sick. I (can't-cannot-can not) wait him.
- 15- He (misused-abused-disused) his body with heroin.
- 16- The surgeon (cleaned-cleansed-clarified) the wound.
- 17- I have to finish my (duty-homework-housework) before watching TV.
- 18- He took many courses in (BASIC-basic-basics).
- 19- He explained us how the computer (RAM-Ram-ram) works.
- 20- Please, never (reply to-answer-respond to) more questions than required.

=====Good Luck=====

Dr Khaled Sirwah