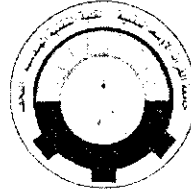


القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: الالكترونيات
زمن الامتحان: ساعتان
التاريخ: 2016/ 02/ 21



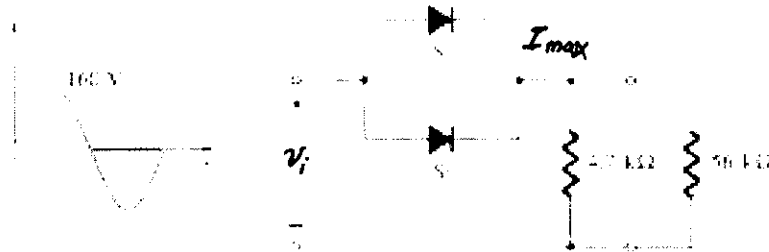
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي 2016/2015

Note: Answer all questions.

Q1\ For the following circuit:

(24 marks)



- Given $P_{max} = 14$ mW for each diode, determine the maximum current rating of each diode.
- Determine I_{max} for $V_{max} = 160$ V.
- Determine the current through each diode at $V_{i,max}$ using the results of part (b).
- If only one diode was present, determine the diode current.

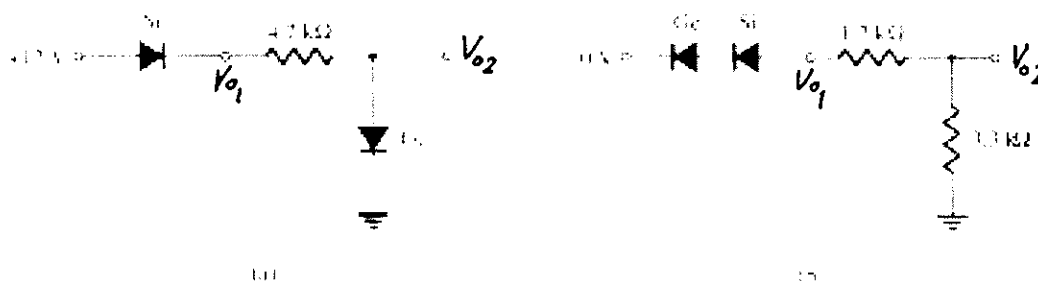
Q2/ A full-wave bridge rectifier with a 120-V_{rms} sinusoidal input has a load resistor of 1KΩ. If silicon diodes are employed,

(25 marks)

- What is the dc voltage available at the load?
- Find the maximum current through each diode during conduction.
- sketch V_o , V_{D1} , V_{D2} and I_L .
- What is the required power rating of each diode?
- Find the PIV for each diode?

Q3/A- Determine V_{o1} and V_{o2} for the networks:

(12 marks)



B- Describe the difference between donor and acceptor impurities.

(7 marks)

C- Determine the diode current at 20°C for a silicon diode with $I_s = 50$ nA and an applied forward bias of 0.6 V, where $k = 11,600/2$

(6 marks)

21/02/2016

رئيس القسم: ليث وجيه

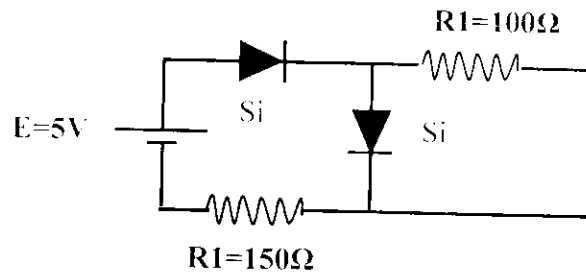
أحمد قاتم

مدرسو المادة: مروة جليل

Q4/Answer two of the followings:

(26 marks)

- 1- Why is PIV important in rectifier service.
- 2- Explain the effect of adding a pentavalent or trivalent impurities to a semiconductor material ?
- 3- Determine the currents I_{D1} , I_{D2} , and I_{R1} for the network below:



Good luck...



القسم : هندسة تقنيات الاتصالات

المرحلة : الاولى

المادة : رياضيات

زمن الامتحان : ساعتان

التاريخ : ٢٠١٦/٠٢/٢٢

امتحان الفصل الأول- العام الدراسي ٢٠١٥/٢٠١٦

Answer any four questions || All questions carry equal marks

Q1:A:-Find X if $A \cdot X = \begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix}$, and $A^{-1} = \begin{bmatrix} 1 & -2 & 5 \\ 1 & -3 & 6 \\ -1 & 3 & -7 \end{bmatrix}$ (15MARKS)

Q1:B:-Show that : $3B$ is symmetric if $B = A A^{-1}$. (10 MARKS)

Q2:A:-Find **three only** of the followings: (15MARKS)

1) $\lim_{n \rightarrow \infty} \frac{n^3 - 4n}{3n^2 - 1}$ 2) $\lim_{x \rightarrow -2} \frac{x^2 + 4x + 4}{x + 2}$
3) $\lim_{x \rightarrow \infty} \frac{2x - 1}{x + 2}$ 4) $\lim_{dx \rightarrow 0} \frac{(x + dx)^2 - x^2}{dx}$

Q2:B:-Simplifying trigonometric expressions : (10 MARKS)

1) $(1 + \tan x)^2 - 2 \sin x \sec x$ 2) $\frac{\csc x}{\tan x + \cot x}$

Q3:A :-Find x in the following equations: (15MARKS)

1) $\cos 2x - \cos x + 1 = 0$ 2) $16^{x-1} = \frac{1}{32}$ 3) $\cosh x = \sinh x + 1/2$

Q3:B -prove that : (10 MARKS)

1) $\frac{\sin^2 x}{1 - \cos x} = 1 + \cos x$ 2) $\cot x \cos x + \sin x = \csc x$

Q4:A:-Solve the system : $\begin{cases} x + z = 0 \\ x - 3y = 1 \\ 4y - 3z = 3 \end{cases}$ (use Gramer's Rule)? (15MARKS)

Q4:B:-find **any two** of the followings: (10MARKS)

1) $\left| \frac{x+1}{2} + \frac{3x-1}{3} \right| < 1$ 2) $|y + 3| \geq \frac{1}{2}$ 3) $\left| 5 - \frac{2}{x} \right| < 1$

Q5:A:-Determine if the following two lines are parallels ,based on their equations: (10 MARKS)

1) $y - 3x = 7$
2) $x - 15 = y$

Q5:B:-Find the domain and range of each function: (15 MARKS)

1) $\sqrt{9 - x^2}$ 2) $\frac{1}{x-2}$ 3) $\sqrt{2 - \sqrt{x}}$

31/02/2016

رئيس القسم:

ليث وجيه

مدرس المادة:

حسنين محمد حمزة

مدرس المادة:

حوراء فاضل عبد

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : حاسوبية
زمن الامتحان : ساعتان
التاريخ : 2016/ 02/24



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي 2016/2015

NOTE: ANSWER ALL QUESTIONS

Q1\ Choose the correct answer:

- 1 allows you to delete empty directories.
A. Cls B. Rd C. Del D. Delete (40Marks)
- 2 allows you to create your own directories in DOS.
A. Md B. Mkdir C. Makedir D. Createdir
- 3 is a command used to switch directories in MS-DOS.
A. Cd B. Rd C. Md D. All a), b) and c) are ok
4. For quick reference help with MS-DOS commands in any of the versions of MS-DOS or Windows you can also use after a command.
A. /h B. /help C. /? D. /
- 5 is a command used to remove FILES from the computer.
A. Clear B. Del C. Rd D. Cls
6. Is a command which allows the user to clear the complete contents of the screen and leave only a prompt?
A. Enter B. Clear screen C. Clear D. Cls
- 7 displays or changes file attributes like read, archive, system and hidden.
A. Change B. Attrib C. File D. Modify
- 8 actually means All File Name with All Extensions.
A. /all B. Select all C. All D. *.*
- 9 allows you to list all the files in a directory.
A. Ls B. Dir C. List D. Directory
- 10 allows you to duplicate files.
A. Copy B. Copy paste C. Cp D. Paste

Q2\ Answer the followings:

- a- What are characteristics of fourth generation of the computer?
b- What are the types of computer basis on size?
c- What are the differences between file and directory on MS-DOS?
d- What are the computer main parts?

(24 Marks)

Q3\ a: For each unit below give the corresponding number:

18G byte=-----bits , 13Mbit=-----byte, 25Kbyte=-----bits.

(12Marks)

b: Given tree of fig.(1)

Do the followings:

1. List the content of (A) in page by page.
2. Rename BB.TXT to the name computer.txt.

(24 Marks)

3. Empty folder C.
4. Delete th file (BB3.BMP).
5. Display time of your computer.
6. Create text file as engineer.txt in (B2).

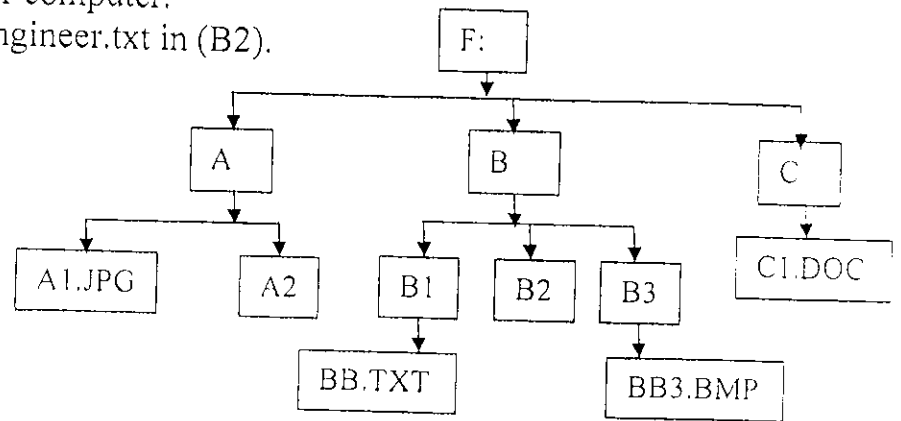


Fig.(1)

GOOD LUCK

24/02/2016

Head of department
L. WAJEEH

Examiner

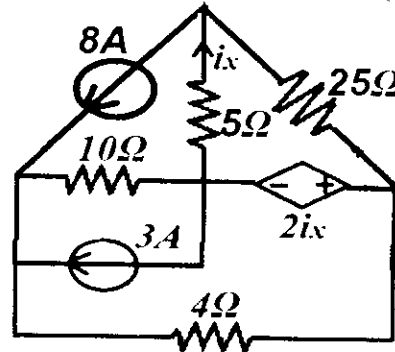
I. ALSHIMAYSAWI

المرحلة : الاولى
المادة: دوائر كهربائية
وقت الامتحان: ساعتان
التاريخ: ٢٠١٦ / ٢ / ٨

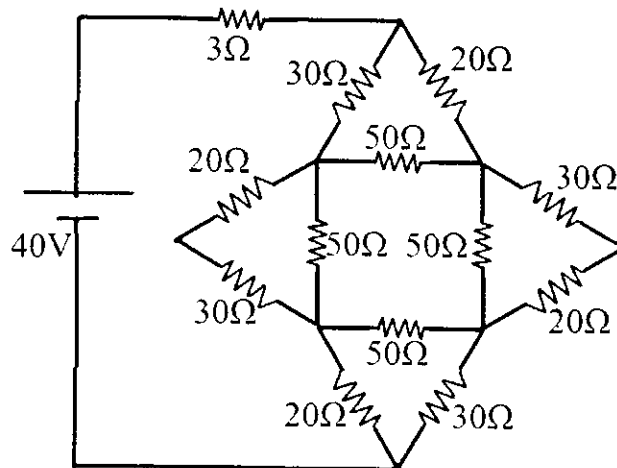
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الاوسط التقنية
الكلية التقنية الهندسية نجف
قسم هندسة تقنيات الاتصالات

امتحان الفصل الاول للعام الدراسي ٢٠١٥ - ٢٠١٦

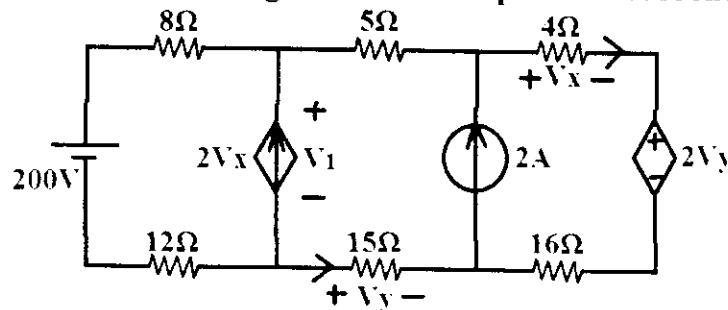
Q1:- Using loop current method, find the voltage across ($5\ \Omega$) resistor. (25Marks)



Q2:- Find the total resistance and total current. (25 Marks)



Q3: Use Kirchhoff's laws to find the voltage across the dependent current source (V_1) (25 Marks)



Q4:- Answer the following:

(25 Marks)

A) Calculate the resistance of a (1 km) length of Aluminium cable if the cross-sectional area of the cable is (50mm^2). Take the specific resistance of Aluminium to be ($0.03 \times 10^{-6}\ \Omega\cdot\text{m}$).
B) Electrical equipment in a house takes a current of (15A) from (220V) supply. Estimate the cost per week of electricity if the equipment is used for (50 hours) in each week and the cost of 1 kWh energy is (100 dinars).

C) An oven takes 10A at 220V supply. It is required to reduce the current to 8A by connecting a series resistance with oven. Find the voltage across the added resistance.

28/02/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



Note: Attempt four questions only. Each question has 25 points.

Q1: A factory produce a power supply devices according to the table below: (15%)

Groups	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70
f_i	7	13	18	22	17	11

Compute:

1. $\overline{M_o}$

2. S^2

3. $\overline{X}$

Q1: B- Define two of the following:

(10%)

1. Ungrouped data.
2. The periodic table.
3. Separated variables.

Q2: A- If you know that the electron charge = the proton charge = $1.6 \times 10^{-19}C$ compute the electric field and the electric force using $\epsilon_o = \frac{10^{-9}}{36\pi}$. At $r = 2mm$. (13%)

Q2: B- There is three different types of measurement errors. List all these types and explain one of them. (12%)

Q3: A- Prove two of the following:

(12%)

1. The potential difference = $V = x^{1/2}m^{1/2}t^{-1}\epsilon_o^{-1/2}$
2. The work = x^2mt^{-2} .
3. $q = x^{3/2}m^{1/2}t^{-1}\epsilon_o^{1/2}$.

Q3: B- Assume there are two different variables such as x_i, y_i then, there are four different summation properties. List all these properties. (13%)

Q4:A- For the following data, 6,9,12,3, 21, 29, 31, 33, 35, 39, 42, 22,40. Compute:

1. Group midpoint.
2. Relative repetition.
3. Truth boundaries.
4. Repetition.

(12%)

Q4: B- What is the meaning of "Histogram, and repetition curves"? explain in details.

(13%)

Q5:A- Draw a diagram explains the repletion polygon curve. Use the following data: at the vertical axis: 3, 9, 11, 15, 21, and at the horizontal axis: 0, 2, 6, 11, 17. (12%)

Q5: B- Give the suitable definition of the arithmetic mean, median, and mode. Then give the most important relations that are used for classified and non-classified data. (13%)

Good Luck 4 all students

Teacher in charge

A.L. Hussam N. Anssary

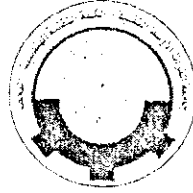
01/03/2016

Head of dept.

A.I. Laith W. Abdullah



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: مبادئ رقمية
زمن الامتحان: ساعتان
التاريخ: ٢٠١٦/ ٣/ ٣



قسم الاتصالات
١/٢
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظات: الإجابة عن جميع الأسئلة
لا يسمح استخدام الحاسبة

Q1/A//: Convert the following number to bases decimal: [20M]

- 1) $(4310)_5$ 2) $(435)_8$ 3) $(198)_{12}$ 4) $(345)_6$
5) $(10110.0101)_2$ 6) $(16.5)_{16}$ 7) $(DADA.B)_{16}$ 8) $(1010.1101)_2$

Q1/B// Convert the following binary numbers to hexadecimal and to decimal:

[5M]

- (a) 1.10010 (b) 110.010.

Q1/C//: Convert decimal 27.315 to binary

[5M]

Q2/A//: Obtain the 1's and 2's complements of the following binary numbers:

[10M]

- (a) 00010000 (b) 00000000 (c) 11011010 (d) 10101010

Q2/B//: Simplify the following Boolean expressions to a minimum number of literals:

[10M]

- 1) $xy + x(wz + w\bar{z})$ 2) $(A + \bar{A}B) ((\bar{A} + B + C) (\bar{C}) ((\bar{A} + B)$

Q2/C//: Expand the following functions as product of sum expressions:

[10M]

- 1) $f(A, B, C, D) = \prod(7; 12; 15)$
2) $f(A, B, C, D, E) = \prod(0; 16; 31)$

Q3/: Simplify the following Boolean functions, using K-maps:

[40M]

- 1) $F(x, y, z) = \sum(1, 2, 3, 6, 7)$
2) $\bar{x}\bar{y} + yz + \bar{x}y\bar{z}$
3) $A\bar{B}C + \bar{B}\bar{C}\bar{D} + BCD + A\bar{C}\bar{D} + \bar{A}\bar{B}C + \bar{A}\bar{B}\bar{C}D$
4) $F(w, x, y, z) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

Good Luck ..

03/03/2016
رئيس القسم:
ليث وجيه

مدرس المادة:
عبد الله علي قاسم



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / النجف



قسم هندسة تقنيات الاتصالات

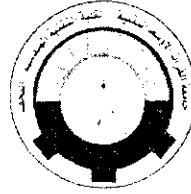
المرحلة الأولى

أسئلة الفصل الأول للعام الدراسي

٢٠١٥-٢٠١٦

شعبة علوم الحاسوب والإحصاء

القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: الالكترونيات
زمن الامتحان: ساعتان
التاريخ: 2016/ 02/ 21



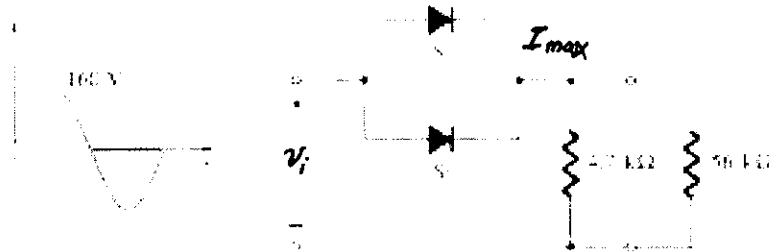
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي 2016/2015

Note: Answer all questions.

Q1\ For the following circuit:

(24 marks)



- Given $P_{max} = 14 \text{ mW}$ for each diode, determine the maximum current rating of each diode.
- Determine I_{max} for $V_{max} = 160 \text{ V}$.
- Determine the current through each diode at $V_{i \max}$ using the results of part (b).
- If only one diode was present, determine the diode current.

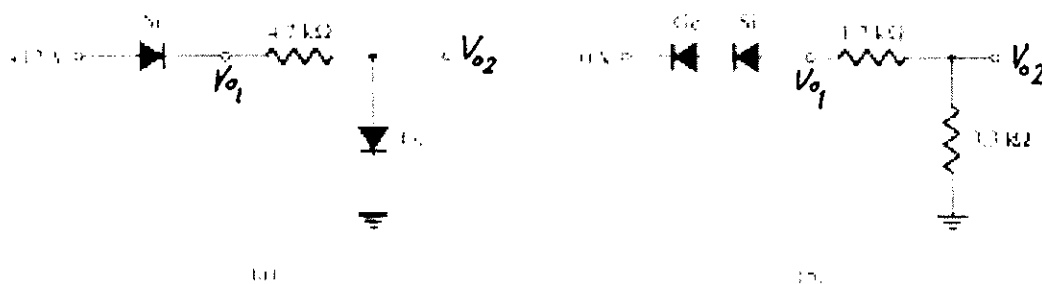
Q2/ A full-wave bridge rectifier with a $120\text{-V}_{\text{rms}}$ sinusoidal input has a load resistor of $1 \text{ k}\Omega$. If silicon diodes are employed,

(25 marks)

- What is the dc voltage available at the load?
- Find the maximum current through each diode during conduction.
- sketch V_o , V_{D1} , V_{D2} and I_L .
- What is the required power rating of each diode?
- Find the PIV for each diode?

Q3/A- Determine V_{o1} and V_{o2} for the networks:

(12 marks)



B- Describe the difference between donor and acceptor impurities.

(7 marks)

C- Determine the diode current at 20°C for a silicon diode with $I_s = 50 \text{ nA}$ and an applied forward bias of 0.6 V , where $k = 11,600/2$

(6 marks)

21/02/2016

رئيس القسم: ليث وجيه

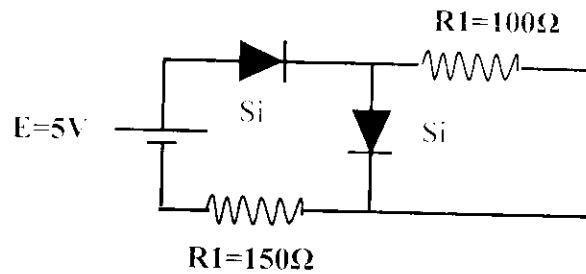
أحمد قاتم

مدرسو المادة: مروة جليل

Q4/Answer two of the followings:

(26 marks)

- 1- Why is PIV important in rectifier service.
- 2- Explain the effect of adding a pentavalent or trivalent impurities to a semiconductor material ?
- 3- Determine the currents I_{D1} , I_{D2} , and I_{R1} for the network below:



Good luck...



القسم : هندسة تقنيات الاتصالات

المرحلة : الاولى

المادة : رياضيات

زمن الامتحان : ساعتان

التاريخ : ٢٠١٦/٠٢/٢٢

امتحان الفصل الأول- العام الدراسي ٢٠١٥/٢٠١٦

Answer any four questions || All questions carry equal marks

Q1:A:-Find X if $A \cdot X = \begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix}$, and $A^{-1} = \begin{bmatrix} 1 & -2 & 5 \\ 1 & -3 & 6 \\ -1 & 3 & -7 \end{bmatrix}$ (15MARKS)

Q1:B:-Show that : $3B$ is symmetric if $B = A A^{-1}$. (10 MARKS)

Q2:A:-Find **three only** of the followings: (15MARKS)

1) $\lim_{n \rightarrow \infty} \frac{n^3 - 4n}{3n^2 - 1}$ 2) $\lim_{x \rightarrow -2} \frac{x^2 + 4x + 4}{x + 2}$
3) $\lim_{x \rightarrow \infty} \frac{2x - 1}{x + 2}$ 4) $\lim_{dx \rightarrow 0} \frac{(x + dx)^2 - x^2}{dx}$

Q2:B:-Simplifying trigonometric expressions : (10 MARKS)

1) $(1 + \tan x)^2 - 2 \sin x \sec x$ 2) $\frac{\csc x}{\tan x + \cot x}$

Q3:A:-Find x in the following equations: (15MARKS)

1) $\cos 2x - \cos x + 1 = 0$ 2) $16^{x-1} = \frac{1}{32}$ 3) $\cosh x = \sinh x + 1/2$

Q3:B:-prove that : (10 MARKS)

1) $\frac{\sin^2 x}{1 - \cos x} = 1 + \cos x$ 2) $\cot x \cos x + \sin x = \csc x$

Q4:A:-Solve the system : $\begin{cases} x + z = 0 \\ x - 3y = 1 \\ 4y - 3z = 3 \end{cases}$ (use Gramer's Rule)? (15MARKS)

Q4:B:-find **any two** of the followings: (10MARKS)

1) $\left| \frac{x+1}{2} + \frac{3x-1}{3} \right| < 1$ 2) $|y + 3| \geq \frac{1}{2}$ 3) $\left| 5 - \frac{2}{x} \right| < 1$

Q5:A:-Determine if the following two lines are parallels ,based on their equations: (10 MARKS)

1) $y - 3x = 7$
2) $x - 15 = y$

Q5:B:-Find the domain and range of each function: (15 MARKS)

1) $\sqrt{9 - x^2}$ 2) $\frac{1}{x-2}$ 3) $\sqrt{2 - \sqrt{x}}$

31/02/2016

رئيس القسم:

ليث وجيه

مدرس المادة:

حسنين محمد حمزة

مدرس المادة:

حوراء فاضل عبد

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : حاسوبية
زمن الامتحان : ساعتان
التاريخ : 2016/ 02/24



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي 2016/2015

NOTE: ANSWER ALL QUESTIONS

Q1\ Choose the correct answer:

- 1 allows you to delete empty directories.
A. Cls B. Rd C. Del D. Delete (40Marks)
- 2 allows you to create your own directories in DOS.
A. Md B. Mkdir C. Makedir D. Createdir
- 3 is a command used to switch directories in MS-DOS.
A. Cd B. Rd C. Md D. All a), b) and c) are ok
4. For quick reference help with MS-DOS commands in any of the versions of MS-DOS or Windows you can also use after a command.
A. /h B. /help C. /? D. /
- 5 is a command used to remove FILES from the computer.
A. Clear B. Del C. Rd D. Cls
6. Is a command which allows the user to clear the complete contents of the screen and leave only a prompt?
A. Enter B. Clear screen C. Clear D. Cls
- 7 displays or changes file attributes like read, archive, system and hidden.
A. Change B. Attrib C. File D. Modify
- 8 actually means All File Name with All Extensions.
A. /all B. Select all C. All D. *.*
- 9 allows you to list all the files in a directory.
A. Ls B. Dir C. List D. Directory
- 10 allows you to duplicate files.
A. Copy B. Copy paste C. Cp D. Paste

Q2\ Answer the followings:

- a- What are characteristics of fourth generation of the computer?
b- What are the types of computer basis on size?
c- What are the differences between file and directory on MS-DOS?
d- What are the computer main parts?

(24 Marks)

Q3\ a: For each unit below give the corresponding number:

18G byte=-----bits , 13Mbit=-----byte, 25Kbyte=-----bits.

(12Marks)

b: Given tree of fig.(1)

Do the followings:

1. List the content of (A) in page by page.
2. Rename BB.TXT to the name computer.txt.

(24 Marks)

3. Empty folder C.
4. Delete the file (BB3.BMP).
5. Display time of your computer.
6. Create text file as engineer.txt in (B2).

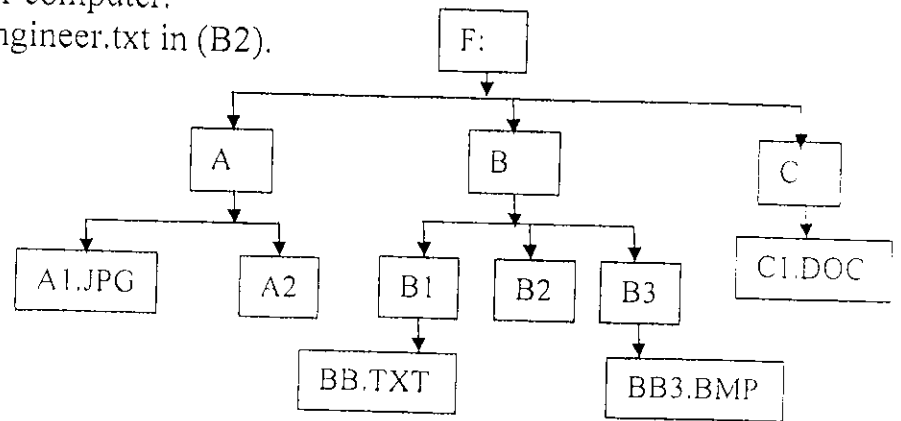
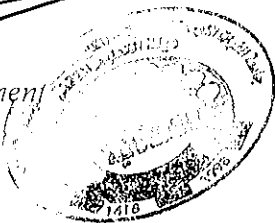


Fig.(1)

GOOD LUCK

24/02/2016

Head of department
L. WAJEEH



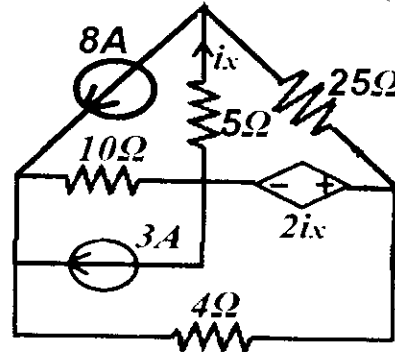
Examiner
I. ALSHIMAYSAWI

المرحلة : الاولى
المادة: دوائر كهربائية
وقت الامتحان: ساعتان
التاريخ: ٢٠١٦ / ٢ / ٨

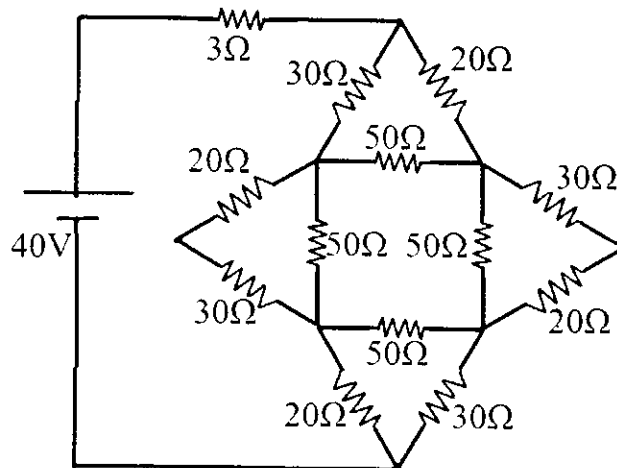
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الاوسط التقنية
الكلية التقنية الهندسية نجف
قسم هندسة تقنيات الاتصالات

امتحان الفصل الاول للعام الدراسي ٢٠١٥ - ٢٠١٦

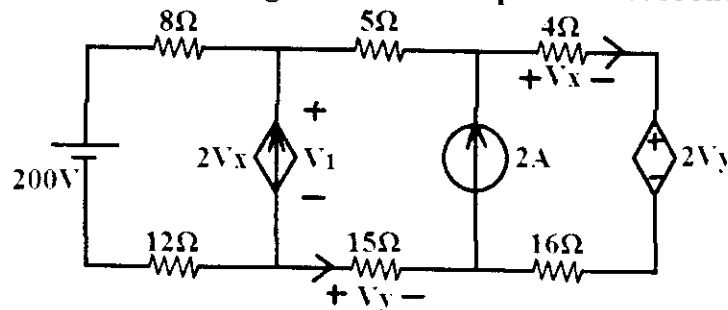
Q1:- Using loop current method, find the voltage across ($5\ \Omega$) resistor. (25Marks)



Q2:- Find the total resistance and total current. (25 Marks)



Q3: Use Kirchhoff's laws to find the voltage across the dependent current source (V_1) (25 Marks)



Q4:- Answer the following:

(25 Marks)

- Calculate the resistance of a (1 km) length of Aluminium cable if the cross-sectional area of the cable is (50mm^2). Take the specific resistance of Aluminium to be ($0.03 \times 10^{-6}\ \Omega\cdot\text{m}$).
- Electrical equipment in a house takes a current of (15A) from (220V) supply. Estimate the cost per week of electricity if the equipment is used for (50 hours) in each week and the cost of 1 kWh energy is (100 dinars).

- An oven takes 10A at 220V supply. It is required to reduce the current to 8A by connecting a series resistance with oven. Find the voltage across the added resistance.

28/02/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



Note: Attempt four questions only. Each question has 25 points.

Q1: A factory produce a power supply devices according to the table below: (15%)

Groups	11 - 20	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70
f_i	7	13	18	22	17	11

Compute:

1. $\overline{M_o}$

2. S^2

3. $\overline{X}$

Q1: B- Define two of the following:

(10%)

1. Ungrouped data.
2. The periodic table.
3. Separated variables.

Q2: A- If you know that the electron charge = the proton charge = $1.6 \times 10^{-19}C$ compute the electric field and the electric force using $\epsilon_o = \frac{10^{-9}}{36\pi}$. At $r = 2mm$. (13%)

Q2: B- There is three different types of measurement errors. List all these types and explain one of them. (12%)

Q3: A- Prove two of the following:

(12%)

1. The potential difference = $V = x^{1/2}m^{1/2}t^{-1}\epsilon_o^{-1/2}$
2. The work = x^2mt^{-2} .
3. $q = x^{3/2}m^{1/2}t^{-1}\epsilon_o^{1/2}$.

Q3: B- Assume there are two different variables such as x_i, y_i then, there are four different summation properties. List all these properties. (13%)

Q4:A- For the following data, 6,9,12,3, 21, 29, 31, 33, 35, 39, 42, 22,40. Compute:

1. Group midpoint.
2. Relative repetition.
3. Truth boundaries.
4. Repetition.

(12%)

Q4: B- What is the meaning of "Histogram, and repetition curves"? explain in details.

(13%)

Q5:A- Draw a diagram explains the repletion polygon curve. Use the following data: at the vertical axis: 3, 9, 11, 15, 21, and at the horizontal axis: 0, 2, 6, 11, 17. (12%)

Q5: B- Give the suitable definition of the arithmetic mean, median, and mode. Then give the most important relations that are used for classified and non-classified data. (13%)

Good Luck 4 all students

Teacher in charge

A.L. Hussam N. Anssary

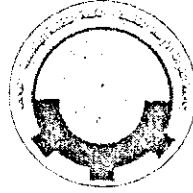
01/03/2016

Head of dept.

A.I. Laith W. Abdullah



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: مبادئ رقمية
زمن الامتحان: ساعتان
التاريخ: ٢٠١٦/ ٣/ ٣



قسم الاتصالات
١/٢
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظات: الإجابة عن جميع الأسئلة
لا يسمح استخدام الحاسبة

Q1/A//: Convert the following number to bases decimal: [20M]

- 1) $(4310)_5$ 2) $(435)_8$ 3) $(198)_{12}$ 4) $(345)_6$
5) $(10110.0101)_2$ 6) $(16.5)_{16}$ 7) $(DADA.B)_{16}$ 8) $(1010.1101)_2$

Q1/B// Convert the following binary numbers to hexadecimal and to decimal:

[5M]

- (a) 1.10010 (b) 110.010.

Q1/C//: Convert decimal 27.315 to binary

[5M]

Q2/A//: Obtain the 1's and 2's complements of the following binary numbers:

[10M]

- (a) 00010000 (b) 00000000 (c) 11011010 (d) 10101010

Q2/B//: Simplify the following Boolean expressions to a minimum number of literals:

[10M]

- 1) $xy + x(wz + w\bar{z})$ 2) $(A + \bar{A}B) ((\bar{A} + B + C) (\bar{C}) ((\bar{A} + B)$

Q2/C//: Expand the following functions as product of sum expressions:

[10M]

- 1) $f(A, B, C, D) = \prod(7; 12; 15)$
2) $f(A, B, C, D, E) = \prod(0; 16; 31)$

Q3/: Simplify the following Boolean functions, using K-maps:

[40M]

- 1) $F(x, y, z) = \sum(1, 2, 3, 6, 7)$
2) $\bar{x}\bar{y} + yz + \bar{x}y\bar{z}$
3) $A\bar{B}C + \bar{B}\bar{C}\bar{D} + BCD + A\bar{C}\bar{D} + \bar{A}\bar{B}C + \bar{A}\bar{B}\bar{C}D$
4) $F(w, x, y, z) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

Good Luck ..

03/03/2016
رئيس القسم:
ليث وجيه

مدرس المادة:
عبد الله علي قاسم



Notes/ 1. Answer all questions 2. All questions have equal marks

Q1/ How can you done the following jobs in Auto CAD program? (write it by macro method):-

1. Draw a polygon with 8 sides (the side length is 10mm)
2. Copy the polygon in section (1) for a distance (140 mm to right side).
3. Eliminate a lower half circle with (25 mm in radius).
4. Complete a quarter circle to become a full one (20 mm in radius).

Q2/ What is the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketch with dimensions for each one of the following.

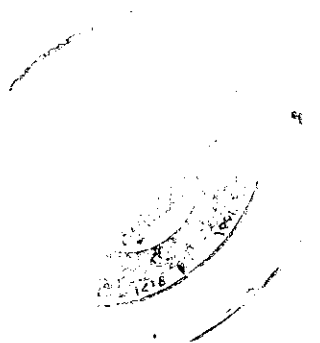
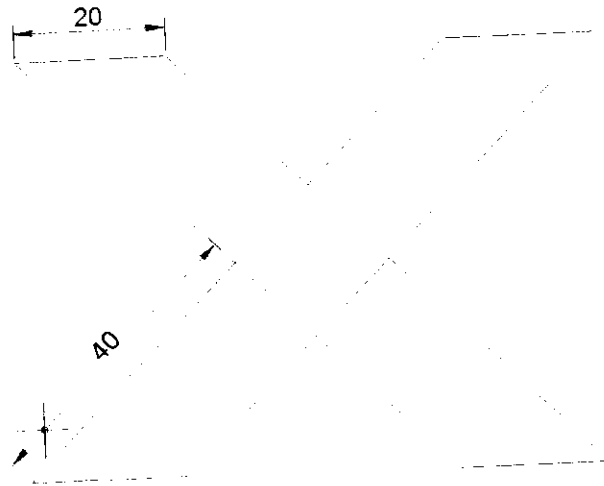
1. L ; 100,100 ; @100,0 ; @0,100 ; @-100,0 ; c ;
2. rec ; f ; 5 ; 0,0 ; 100,100 ;
3. pol ; 6 ; 150,150 ; c ; 100 ;
4. c ; 2p ; 50,50 ; 150,50 ;

Q3/ Choose the correct answer which achieve the sentence for **five** of the following :

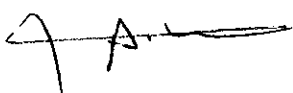
1. Auto CAD program is one of the programs that help
a. Stresses Analysis b. data analysis c. design and engineering drawing d. simulation
2. To draw rectangle in Auto CAD program at command line by write
a. recta b. rect c. rcta d. rec
3. In order to add another object with original body staying , go to..... in command toolbar.
a. Move b. Scale c. Copy d. rotate
4. CAD refers to
a. computer added design b. computer animation design c. car added design
d. computer automotive design.
5. There are ways to draw a circle in Auto CAD.
a. Six b. Seven c. Ten d. Eleven
6. Instruct that changes the ends of the rectangle to the arches is.....
a. Chamfer b. tan tan raduis c. Fillet d. 3 points

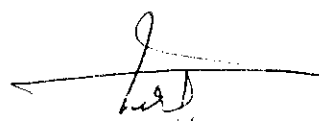
Q4/ How many ways to draw a rectangle in AutoCAD? Explain it with sketching.

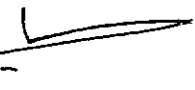
Q5/ Write the basic steps to draw the following drawing :-



With best wishes


Lecturer


Lecturer

09/05/2016 
Head of Department

القسم : هندسة تقنيات الاتصالات
المرحلة : الأولى
المادة: مبادئ الرقمية
زمن الامتحان: ساعتان
التاريخ: ٢٠١٦/٠٥/٠٣

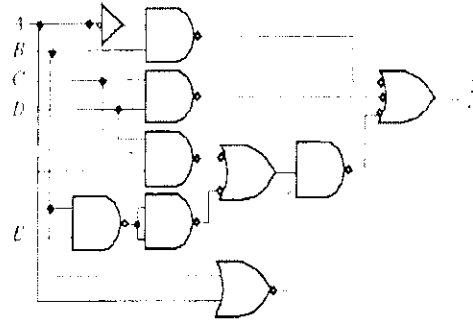


جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

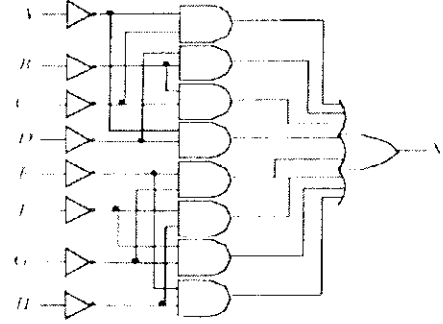
إمتحان الفصل الثاني - العام الدراسي ٢٠١٥ / ٢٠١٦

Q1// reduce and minimum terms

(30M)



(B)



(a)

Q2//A// Apply DeMorgan's theorems to the following and draw the circuit: (15M)

$$f = \overline{(A + B) (C + D) (E + F) (G + H)}$$

Q2//B/ Apply the following equation in combinational logic diagram (15M)

$$f = \overline{(A + B) (C + D) (E + F) (G + H)}$$

Q3// Draw block diagram shows the sum outputs when 1111 and 1101 are added by the 4-bit parallel adder (10M)

Q4// Draw a block diagram for 4-bit parallel subtractor by using four units A=1101 and B=1011 (10M)

Q5// Using Karnaugh maps simplify the following logic functions and draw logic circuit for two cases: (20M)

1. If the (don't care condition) taken in consideration.

2. If the (don't care condition) not taken in consideration.

$$F = \sum (1, 5, 8, 10, 12) \text{ and don't care condition } D = \sum (7, 9, 11, 13).$$

Good Luck...

رئيس القسم
ليث وجيه



مدرس المادة
عبدالله علي قاسم



Answer All Questions

Note: figures in the back of question's paper

Q1/a) Choose the correct answer:

(10 Marks)

- Crossover distortion behavior is characteristic of
A. Class A output stage. B. Class B output stage. C. Class C output stage. D. Common base output.
- In a negative feedback amplifier using voltage-series feedback ,
A. R_i decreases and R_o decreases. B. R_i decreases and R_o increases.
C. R_i increases and R_o decreases. D. R_i increases and R_o increases.
- The voltage gain of an amplifier without feedback is 3000. Calculate the voltage gain of the amplifier if negative voltage feedback is introduced in the circuit. Given that feedback fraction $= 0.01$.
A. 97. B. 100.
C. 300. D. 50.
- Relaxation oscillators are generally used to _____ for such applications as blinking lights.
A. produce low frequency signals. B. clock signals.
C. voltage controlled. D. produce square and triangle waves.
- _____ in this type the capacitor is both charged and discharged slowly through a resistor, so the output waveform consists of two parts, an increasing ramp and a decreasing ramp.
A. fly back oscillator. B. Saw tooth oscillator. C. Tri-tet oscillator. D. Astable multivibrator oscillator

Q1.b) Write true or false with an indication of the reason if false:

(15Marks)

- A low-frequency oscillator (LFO) is an electronic oscillator that generates a frequency below ≈ 20 Hz.
- An RF oscillator produces signals in the radio frequency (RF) range of about 100 Hz to 100 MHz .
- Negative feedback in amplifier design Reduce the effect of noise.
- If the feedback fraction of an amplifier is 0.01, then voltage gain with negative voltage feedback is approximately 1000.
- Negative feedback is employed in amplifiers.

Q2/a) A crystal has $L = 3H$, $C_s = 0.05$ pF, $R = 2$ k Ω and $C_p = 10$ pF. Calculate the series-resonant and parallel-resonant frequencies of the crystal.

(10Marks)

- With a negative voltage feedback, an amplifier gives an output of 10 V with an input of 0.5 V. When feedback is removed, it requires 0.25 V input for the same output. Calculate (i) gain without feedback (ii) feedback fraction β .

(15Marks)

Q3/a) Derivative the input and output impedances for shunt-shunt feedback with drawing the circuit.

(10Marks)

- A basic Class C-amplifier is shown in fig. (1), the operating frequency is 3MHz. Calculate the resonant frequency. If width of pulses (56.6ns), find the conduction angle also.

(15Marks)

Q4/a) Calculate maximum ac output power and the power dissipation of the transistors in the push-pull amplifier shown in fig. (2).

(10 Marks)

- Calculate maximum ac output power in the amplifier shown in fig. (3) (Assume $V_{BE} = 0$).

(15 Marks)



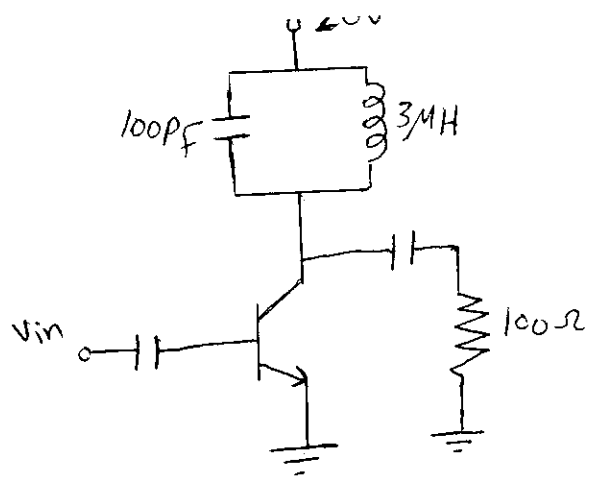
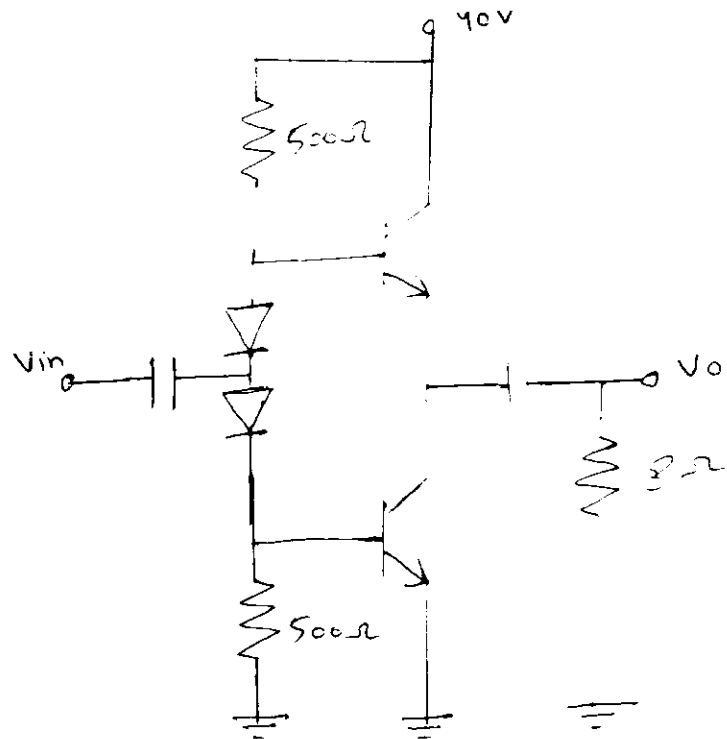


Fig.(1)



fig(2)

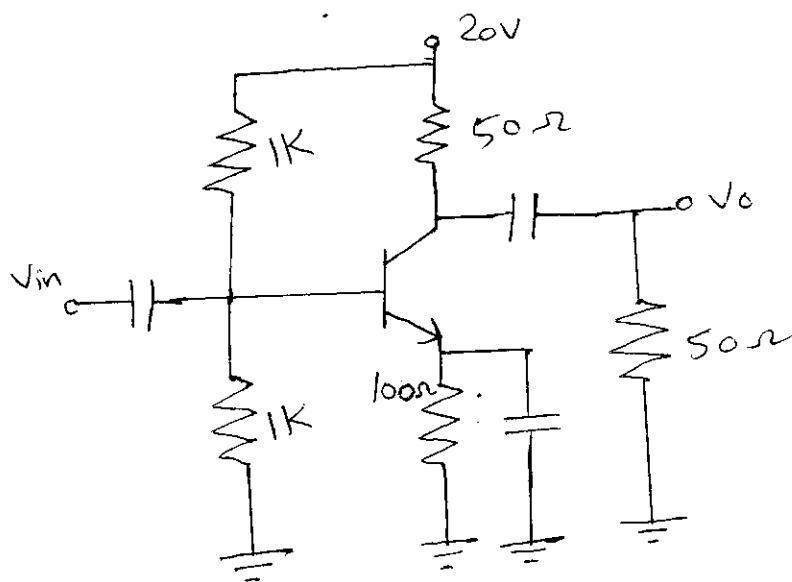
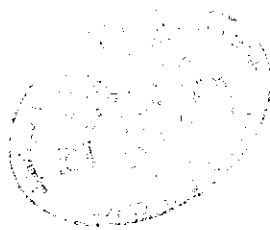


Fig.(3)



**Note: Attempt all questions.**

Q1: A- For figure (1) in your exam sheet, explain in details the general idea of the circuit. Give the operational procedure of the circuit. Finally give the disadvantages of the circuit. **(15 Marks)**

Q1: B- Why is the sensitivity of best multimeter do not exceed the 20 kΩ per volt? Explain this in details. **(15 points)**

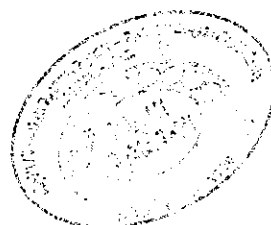
Q2: For figure (2) shown in your exam sheet, compute the voltage at points A,B,C, and D before and after connecting the meter. Then compute the sensitivity of the instrument. Finally show the reasons that the reading after the connection of the meter is differ from that before it connecting? **(30 points)**

Q3: A- Compute the standard mark for each subject for five students in the technical college of Najaf in (electrical measurements and electrical circuits subjects) in the first stage of this college, where: **(20 points)**

	1	2	3	4	5
Subject X	50	52	69	72	81
Subject Y	62	77	81	85	86

Q3: B- Answer the following:

- What types of measurements can be made with a multimeter? Explain with suitable diagram. Then list the applications of multimeter. **(8 points)**
- Fill in the blanks with the suitable choice: **(12 points)**
 - A galvanometer in series with a high resistance is known as
 - An ammeter
 - A voltmeter
 - A wattmeter
 - None of the above.
 - A voltmeter should have resistance.
 - Zero
 - Very low
 - Very high
 - None of the above.
 - The sensitivity of the multimeter is given in
 - Volt per kΩ
 - kΩ per volt
 - watt per volt
 - None of the above.



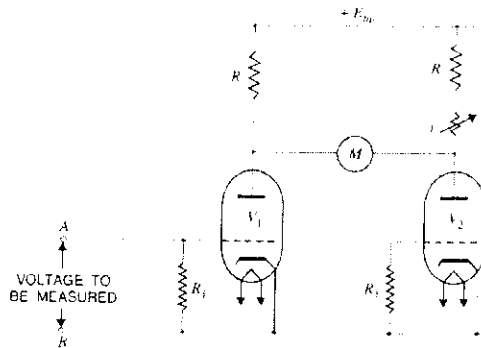


Fig. (1)

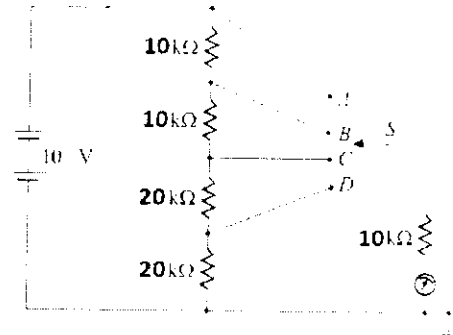


Fig. (2)

Good Luck for All students

Signature

Teacher in charge

A.L. Hussam N. Al-Anssary

Signature

Head of Dept.

A.L. L. Wajeel Abdullah



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: الكرونك
زمن الامتحان: ساعتان



إمتحان الفصل الثاني - العام الدراسي ٢٠١٥/٢٠١٦

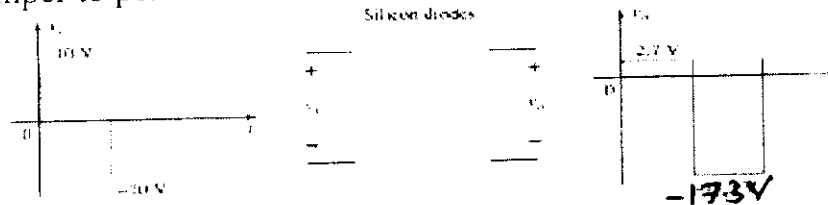
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية

Note: Answer all questions

Q1/ A- Zener diode with data sheet characteristics ($V_Z = 10V, P_{max} = 8W$), design a voltage regulator circuit from 40V to 20V. (15Marks)

B-What is the ripple factor? How can you lowered it? (10 Marks)

Q2/A-Design a clamper to perform the function indicated in below figure:



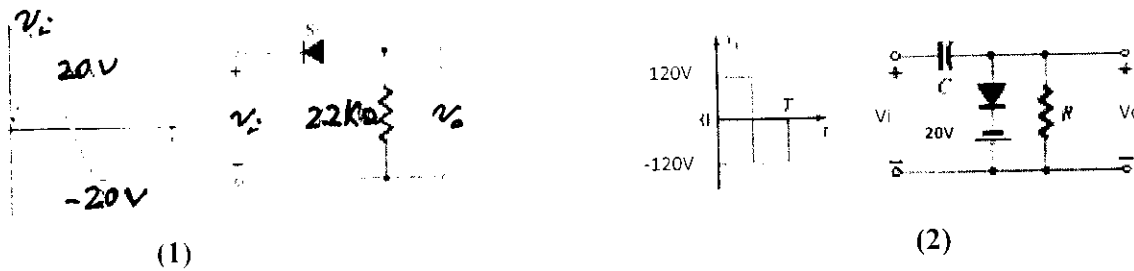
(13Marks)

B- What is the purpose of using the following?

1. Filter capacitor in half and full wave rectifiers.
2. Clamper circuits.
3. Voltage multiplier circuits.

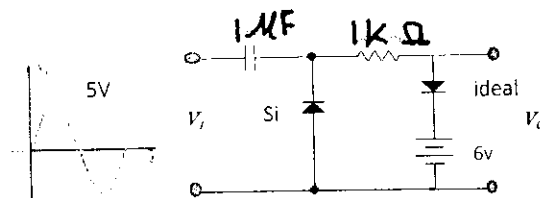
(12 Marks)

Q3/ A- Determine v_o for each network of Figure below:



(1)

(2)

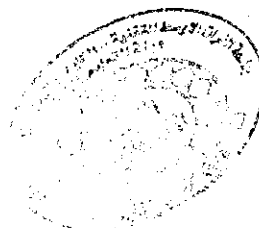


(3)

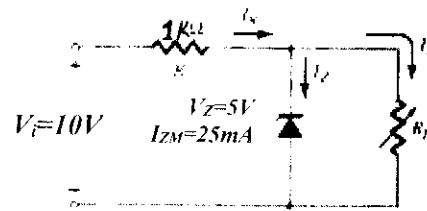
(15 Marks)

B-A full wave rectifier is operated from a 50 Hz line and has a filter capacitor connected across its output. What minimum value of capacitance is required if the load is $1.2K\Omega$ and the ripple must be no greater than 2.4%? (10 Marks)

يتبع...

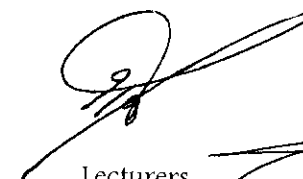


Q4/ For the network of Figure below:



1. Determine the range of R_L and I_L that will result in V_{RL} being maintained at 5 V.
2. Determine the maximum wattage rating of the diode. (25 Marks)

Good luck...


Lecturers
Marwa Jalcel & Ahmed Qaiem



30/04/2016

Head of department
Laith Wajeeh

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى / الاتصالات
المادة : حقوق الانسان
زمن الامتحان : ساعتان
التاريخ : ٢٨ / ٠٤ / ٢٠١٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الثاني - العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة الاجابة على جميع الاسئلة

س١/ اشرح الحقوق الاجتماعية الواردة في دستور العراق لسنة ٢٠٠٥ والقوانين النافذة. (٢٥ درجة)

س٢/ ان عدم تركيز السلطة بيد هيئة واحدة يشكل ضمانا من ضمانات حقوق الانسان ، ناقش ذلك. (٢٥ درجة)

س٣/ وضح مفهوم الديمقراطية ثم عدد صورها وتكلم عن كل صورة من صورها. (٢٥ درجة)

س٤/ اجب عن ما يلي (٢٥ درجة)

أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصحح الخطأ ان وجد .
١- ان مبدأ قانونية الجرائم والعقوبات من الوسائل الدستورية التي تساعد على حماية حقوق الانسان .

٢- نص دستور العراق لسنة ٢٠٠٥ على ان (لا تفرض الضرائب والرسوم ولا تعدل ولا تجبى ولا يعفى منها الا بقانون) .

٣- سار دستور العراق لسنة ٢٠٠٥ بالنسبة لحق الملكية باتجاه معاكس لما نصت عليه الدساتير التي شرعت بعد سنة ١٩٥٨ .

٤- حضرت المادة (١٢٦) من دستور العراق اجراء تعديل على الحقوق والحريات الا بعد دورتين متعاقبتين ، وبناء على موافقة الاغلبية المطلقة لأعضاء مجلس النواب عليه ، وموافقة الشعب بالاستفتاء العام ومصادقة رئيس الجمهورية .

٥- ان القواعد القانونية تتميز بالسمو الموضوعي على القواعد الدستورية على اساس انها القواعد الاعلى في البلد .

ب- اكمل العبارات الاتية بما يناسبها من الكلمات

١- من صور الوسائل الدستورية لحماية حقوق الانسان هي،.....

٢- نص الدستور العراقي لسنة ٢٠٠٥ في المادة (٢٠) منه على ان (للمواطنين رجالا ونساء حق المشاركة في الشؤون العامة والتمتع بالحقوق السياسية بما فيها حق التصويت والانتخاب و.....) .

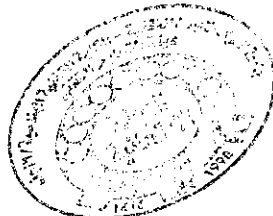
٣- من مظاهر مبدأ الحق في المساواة هي ،

٤- لا يسري القانون الجنائي بأثر رجعي الا اذا كان

٥- ان القواعد الدستورية تتسم بالوضوح والدقة والتحديد مما يؤدي الى ضمان حقوق الافراد وحرياتهم .

28/04/2016

رئيس القسم: ليث وجيه عبد الله



مدرس المادة : حيدر عبد الجليل

القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: حاسبة
زمن الامتحان: ساعتان
التاريخ: 27/4/2016



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

إمتحان الفصل الثاني- العام الدراسي 2015/2016

NOTE: ANSWER ALL QUESTIONS

Q1\ Define the following (answer five only).

(20Marks)

- | | | |
|----------------|--------------|-----------------|
| 1. Desk top | 2. Password | 3. Screen saver |
| 4. Recycle bin | 5. The Paint | 6. Formatting |

Q2\ Write the types of viruses and explain how can virus spread.

(20Marks)

Q3\ How can you :

(12Marks)

1. Make the task bar hidden?
2. Make the task bar on the right of screen?
3. Change the mouse pointer?
4. Change the background with your picture?

Q4\ What are the contents of Appearance and personalization, explain two of them.

(20Marks)

Q5\ What are the contents of task bar? explain them.

(12Marks)

Q6\ Explain how can you change language and time.

(8Marks)

Q7\ What is system restore? How can you create a restore point?

(8Marks)

GOOD LUCK

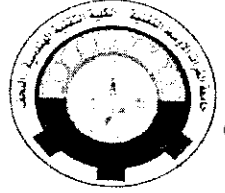
27/04/2016

Head of department
L. WAJEEH



Examiner
I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ساعتان
التاريخ : ٢٠١٦/٠٤/٢٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي ٢٠١٦/٢٠١٥

Answer all questions

Q1:- find any **five** of the following indefinite integrals: (30 MARKS)

$$1) \int \frac{2 dx}{\sqrt{x}(1+x^2)}$$

$$3) \int \frac{\sinh x dx}{\cosh^4 x}$$

$$5) \int \frac{\sin x \cdot e^{\sec x} dx}{\cos^2 x}$$

$$2) \int \frac{dx}{e^{3x}}$$

$$4) \int \frac{\tan^{-1} x dx}{1+x^2}$$

$$6) \int \frac{x+1}{x-1} dx$$

Q2:A:-show that the functions: (15MARKS)

$$X = \frac{-2}{\sqrt{3}} \sinh \frac{t}{\sqrt{3}} \quad \text{and} \quad y = \frac{1}{\sqrt{3}} \sinh \frac{t}{\sqrt{3}} + \cosh \frac{t}{\sqrt{3}}$$

Taken together. Satisfy the differential equation: $\frac{dx}{dt} + 2 \frac{dy}{dt} + x = 0$

Q2:B:-Evaluate any **one** of the following : (integration by parts) (13MARKS)

$$1) \int \sin^{-1} ax dx$$

$$2) \int \frac{x dx}{e^x}$$

Q2:C:-use **chain rule** find $\frac{dy}{dx}$ of any one of the following functions: (12MARKS)

$$1) y = \frac{u^2}{u^2+1} \text{ and } u = 3x^3 - 2$$

$$2) y = \sqrt{u} + u \text{ and } u = x^2 + 3$$

Q3:-find derivative for **five** of the following functions: (30 MARKS)

$$1) y = \ln \sqrt{\frac{x-1}{x+1}}$$

$$4) y = \cos^{-3}(5x^2 + 2)$$

$$2) y = (\csc x + \cot x)^2$$

$$5) y = \operatorname{csch} \frac{1}{x}$$

$$3) y = x \ln (\sec^{-1} x)$$

$$6) y = 2 \cosh^{-1} \frac{x}{2} + \frac{x}{2} \sqrt{x^2 - 4}$$

26/04/2016

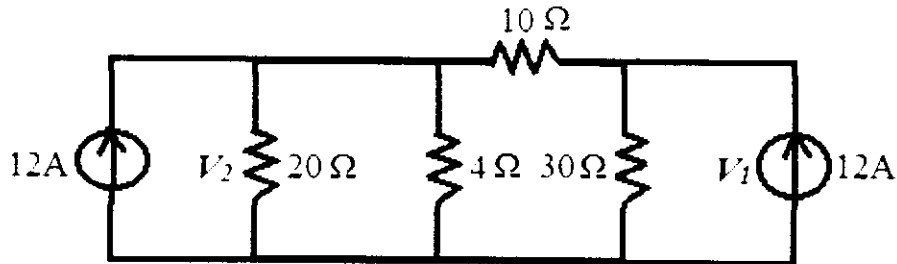
Dr. Huda Najmeh

Lecturer:
Hussein M. Kamz

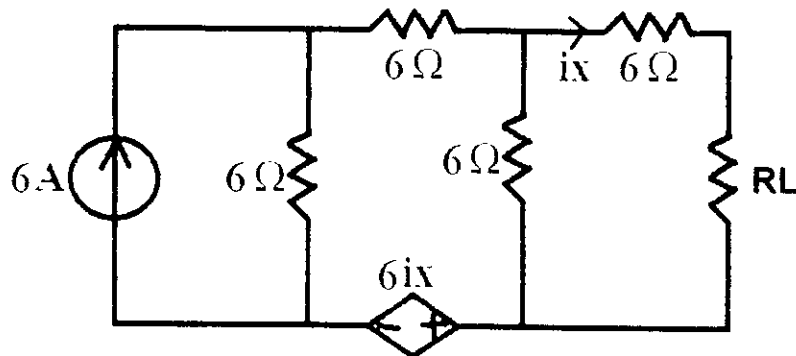
Lecturer:
Hussein F. Al-Obadi

Q1:- Use superposition theorem to find V_1 and V_2 .

(25Marks)

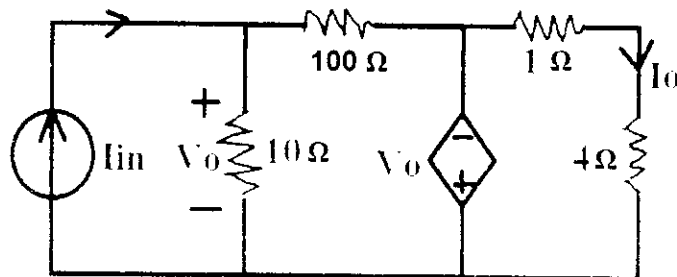


Q2:-Find the value of the resistor (R_L) that delivers maximum power dissipation. (25 Marks)

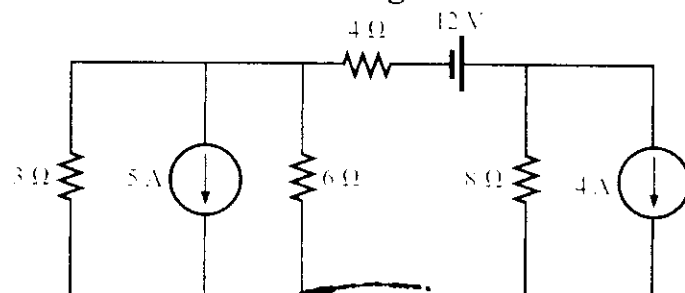


Q3: Use Nodal analysis to find the ratio (I_o/I_{in})

(25 Marks)



Q4:- Using source transformation method, reduce the following network to a single current source, and calculate the current through each resistor. (25 Marks)





جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية / النجف



قسم هندسة تقنيات الاتصالات

المرحلة الأولى

أسئلة الفصل الثاني للعام الدراسي

٢٠١٥-٢٠١٦

شعبة علوم الحاسوب والإحصاء



Notes/ 1. Answer all questions 2. All questions have equal marks

Q1/ How can you done the following jobs in Auto CAD program? (write it by macro method):-

1. Draw a polygon with 8 sides (the side length is 10mm)
2. Copy the polygon in section (1) for a distance (140 mm to right side).
3. Eliminate a lower half circle with (25 mm in radius).
4. Complete a quarter circle to become a full one (20 mm in radius).

Q2/ What is the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketch with dimensions for each one of the following.

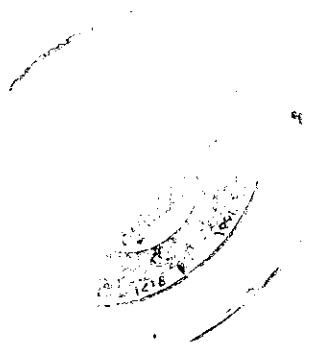
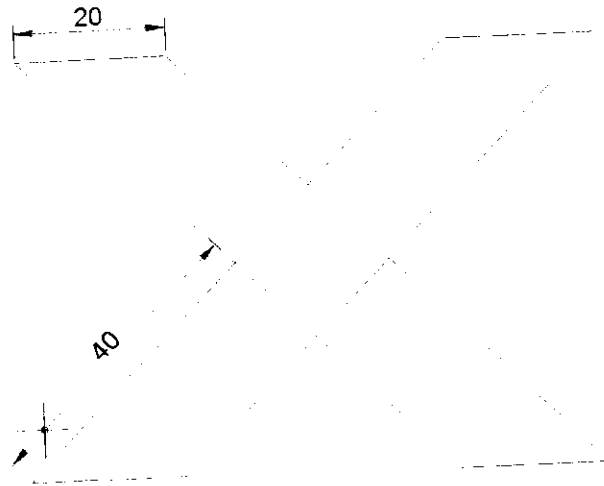
1. L ; 100,100 ; @100,0 ; @0,100 ; @-100,0 ; c ;
2. rec ; f ; 5 ; 0,0 ; 100,100 ;
3. pol ; 6 ; 150,150 ; c ; 100 ;
4. c ; 2p ; 50,50 ; 150,50 ;

Q3/ Choose the correct answer which achieve the sentence for **five** of the following :

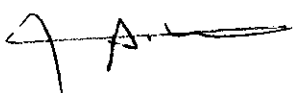
1. Auto CAD program is one of the programs that help
a. Stresses Analysis b. data analysis c. design and engineering drawing d. simulation
2. To draw rectangle in Auto CAD program at command line by write
a. recta b. rect c. rcta d. rec
3. In order to add another object with original body staying , go to..... in command toolbar.
a. Move b. Scale c. Copy d. rotate
4. CAD refers to
a. computer added design b. computer animation design c. car added design
d. computer automotive design.
5. There are ways to draw a circle in Auto CAD.
a. Six b. Seven c. Ten d. Eleven
6. Instruct that changes the ends of the rectangle to the arches is.....
a. Chamfer b. tan tan raduis c. Fillet d. 3 points

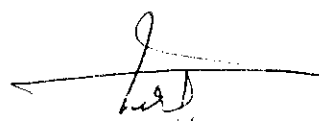
Q4/ How many ways to draw a rectangle in AutoCAD? Explain it with sketching.

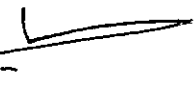
Q5/ Write the basic steps to draw the following drawing :-



With best wishes


Lecturer


Lecturer

09/05/2016 
Head of Department

القسم : هندسة تقنيات الاتصالات
المرحلة : الأولى
المادة: مبادئ الرقمية
زمن الامتحان: ساعتان
التاريخ: ٢٠١٦/٠٥/٠٣

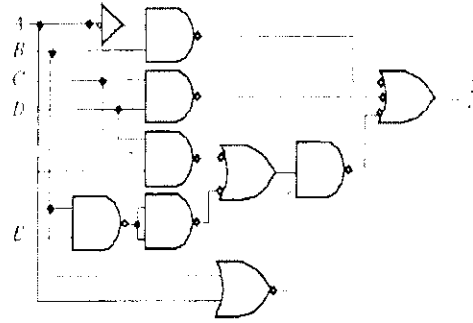


جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

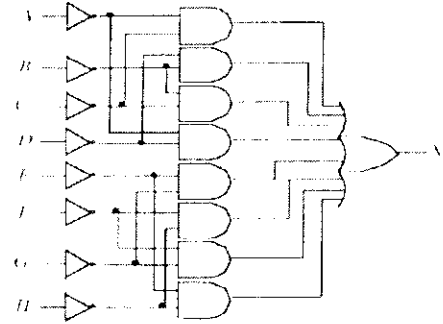
إمتحان الفصل الثاني - العام الدراسي ٢٠١٥ / ٢٠١٦

Q1// reduce and minimum terms

(30M)



(B)



(a)

Q2//A// Apply DeMorgan's theorems to the following and draw the circuit: (15M)

$$f = \overline{(A + B) (C + D) (E + F) (G + H)}$$

Q2//B/ Apply the following equation in combinational logic diagram (15M)

$$f = \overline{(A + B) (C + D) (E + F) (G + H)}$$

Q3// Draw block diagram shows the sum outputs when 1111 and 1101 are added by the 4-bit parallel adder (10M)

Q4// Draw a block diagram for 4-bit parallel subtractor by using four units A=1101 and B=1011 (10M)

Q5// Using Karnaugh maps simplify the following logic functions and draw logic circuit for two cases: (20M)

1. If the (don't care condition) taken in consideration.

2. If the (don't care condition) not taken in consideration.

$$F = \sum (1, 5, 8, 10, 12) \text{ and don't care condition } D = \sum (7, 9, 11, 13).$$

Good Luck...

رئيس القسم
ليث وجيه



مدرس المادة
عبدالله علي قاسم



Answer All Questions

Note: figures in the back of question's paper

Q1/a) Choose the correct answer:

(10 Marks)

- Crossover distortion behavior is characteristic of
A. Class A output stage. B. Class B output stage. C. Class C output stage. D. Common base output.
- In a negative feedback amplifier using voltage-series feedback ,
A. R_i decreases and R_o decreases. B. R_i decreases and R_o increases.
C. R_i increases and R_o decreases. D. R_i increases and R_o increases.
- The voltage gain of an amplifier without feedback is 3000. Calculate the voltage gain of the amplifier if negative voltage feedback is introduced in the circuit. Given that feedback fraction $= 0.01$.
A. 97. B. 100.
C. 300. D. 50.
- Relaxation oscillators are generally used to _____ for such applications as blinking lights.
A. produce low frequency signals. B. clock signals.
C. voltage controlled. D. produce square and triangle waves.
- _____ in this type the capacitor is both charged and discharged slowly through a resistor, so the output waveform consists of two parts, an increasing ramp and a decreasing ramp.
A. fly back oscillator. B. Saw tooth oscillator. C. Tri-tet oscillator. D. Astable multivibrator oscillator

Q1.b) Write true or false with an indication of the reason if false:

(15Marks)

- A low-frequency oscillator (LFO) is an electronic oscillator that generates a frequency below ≈ 20 Hz.
- An RF oscillator produces signals in the radio frequency (RF) range of about 100 Hz to 100 MHz .
- Negative feedback in amplifier design Reduce the effect of noise.
- If the feedback fraction of an amplifier is 0.01, then voltage gain with negative voltage feedback is approximately 1000.
- Negative feedback is employed in amplifiers.

Q2/a) A crystal has $L = 3H$, $C_s = 0.05$ pF, $R = 2$ k Ω and $C_p = 10$ pF. Calculate the series-resonant and parallel-resonant frequencies of the crystal.

(10Marks)

- With a negative voltage feedback, an amplifier gives an output of 10 V with an input of 0.5 V. When feedback is removed, it requires 0.25 V input for the same output. Calculate (i) gain without feedback (ii) feedback fraction β .

(15Marks)

Q3/a) Derivative the input and output impedances for shunt-shunt feedback with drawing the circuit.

(10Marks)

- A basic Class C-amplifier is shown in fig. (1), the operating frequency is 3MHz. Calculate the resonant frequency. If width of pulses (56.6ns), find the conduction angle also.

(15Marks)

Q4/a) Calculate maximum ac output power and the power dissipation of the transistors in the push-pull amplifier shown in fig. (2).

(10 Marks)

- Calculate maximum ac output power in the amplifier shown in fig. (3) (Assume $V_{BE} = 0$).

(15 Marks)



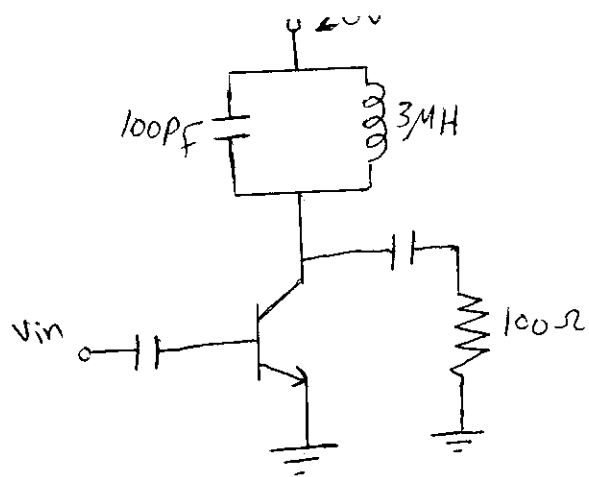
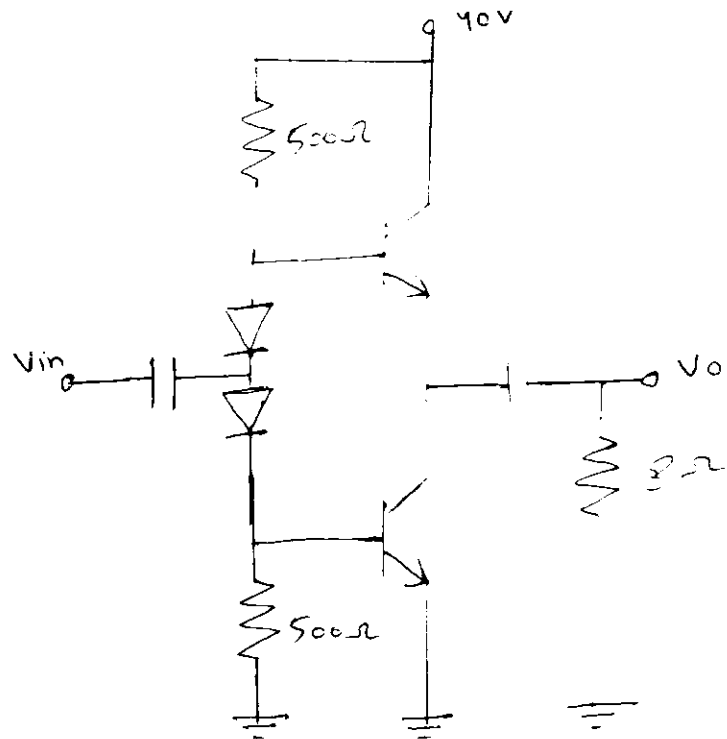


Fig.(1)



fig(2)

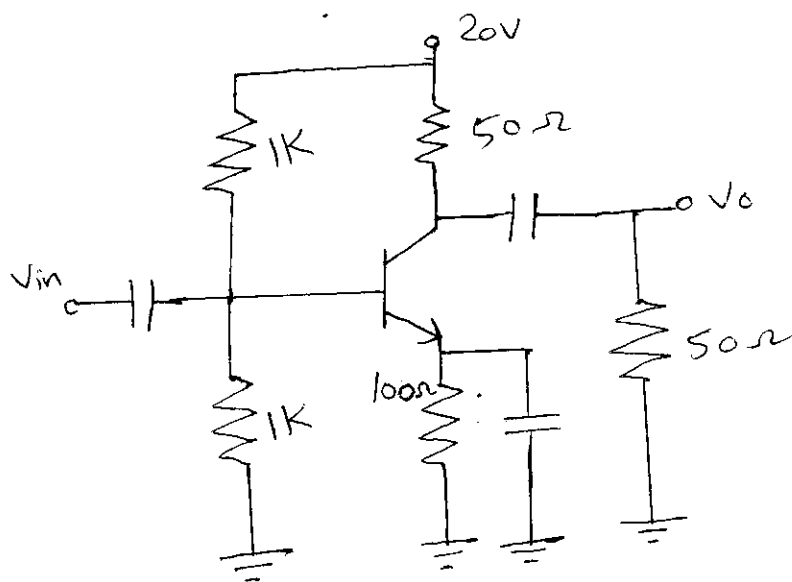
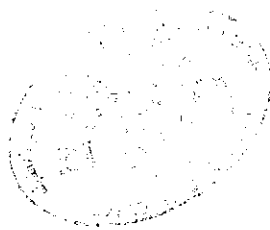


Fig.(3)



**Note: Attempt all questions.**

Q1: A- For figure (1) in your exam sheet, explain in details the general idea of the circuit. Give the operational procedure of the circuit. Finally give the disadvantages of the circuit. **(15 Marks)**

Q1: B- Why is the sensitivity of best multimeter do not exceed the 20 kΩ per volt? Explain this in details. **(15 points)**

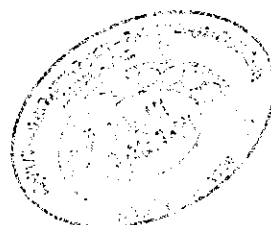
Q2: For figure (2) shown in your exam sheet, compute the voltage at points A,B,C, and D before and after connecting the meter. Then compute the sensitivity of the instrument. Finally show the reasons that the reading after the connection of the meter is differ from that before it connecting? **(30 points)**

Q3: A- Compute the standard mark for each subject for five students in the technical college of Najaf in (electrical measurements and electrical circuits subjects) in the first stage of this college, where: **(20 points)**

	1	2	3	4	5
Subject X	50	52	69	72	81
Subject Y	62	77	81	85	86

Q3: B- Answer the following:

- What types of measurements can be made with a multimeter? Explain with suitable diagram. Then list the applications of multimeter. **(8 points)**
- Fill in the blanks with the suitable choice: **(12 points)**
 - A galvanometer in series with a high resistance is known as
 - An ammeter
 - A voltmeter
 - A wattmeter
 - None of the above.
 - A voltmeter should have resistance.
 - Zero
 - Very low
 - Very high
 - None of the above.
 - The sensitivity of the multimeter is given in
 - Volt per kΩ
 - kΩ per volt
 - watt per volt
 - None of the above.



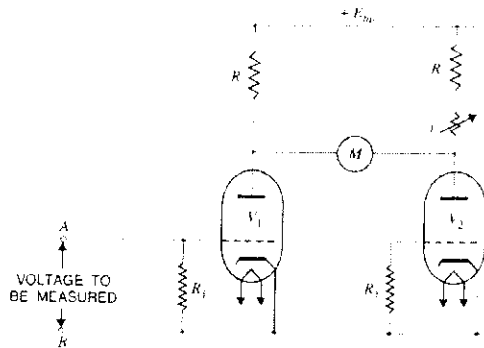


Fig. (1)

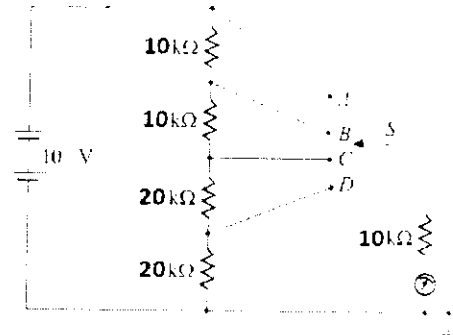


Fig. (2)

Good Luck for All students

Signature

Teacher in charge

A.L. Hussam N. Al-Anssary

Signature

Head of Dept.

A.L. L. Wajeel Abdullah



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: الكرونك
زمن الامتحان: ساعتان



إمتحان الفصل الثاني - العام الدراسي ٢٠١٥/٢٠١٦

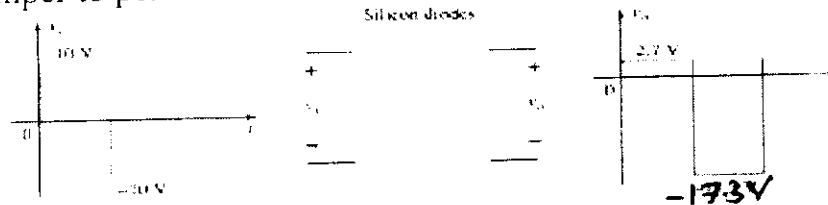
جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية

Note: Answer all questions

Q1/ A- Zener diode with data sheet characteristics ($V_Z = 10V, P_{max} = 8W$), design a voltage regulator circuit from 40V to 20V. (15Marks)

B-What is the ripple factor? How can you lowered it? (10 Marks)

Q2/A-Design a clamper to perform the function indicated in below figure:



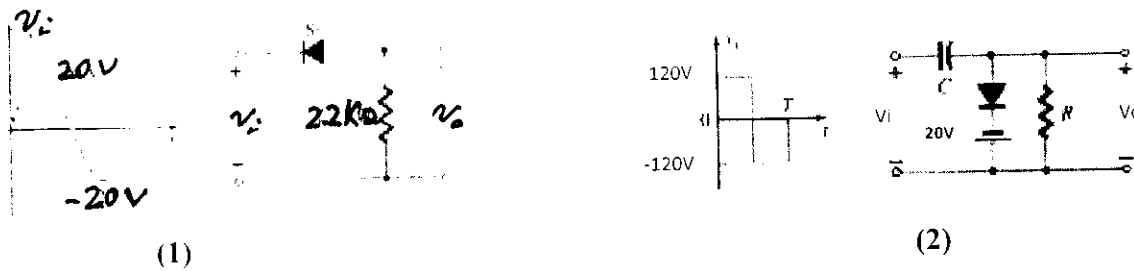
(13Marks)

B- What is the purpose of using the following?

1. Filter capacitor in half and full wave rectifiers.
2. Clamper circuits.
3. Voltage multiplier circuits.

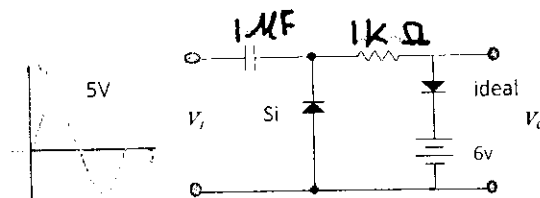
(12 Marks)

Q3/ A- Determine v_o for each network of Figure below:



(1)

(2)

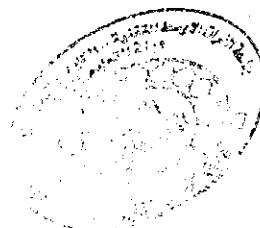


(3)

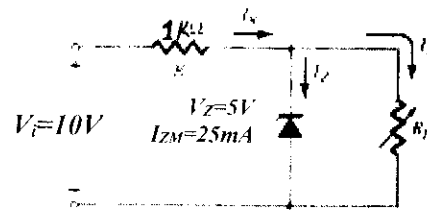
(15 Marks)

B-A full wave rectifier is operated from a 50 Hz line and has a filter capacitor connected across its output. What minimum value of capacitance is required if the load is $1.2K\Omega$ and the ripple must be no greater than 2.4%? (10 Marks)

يتبع...

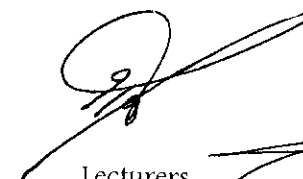


Q4/ For the network of Figure below:

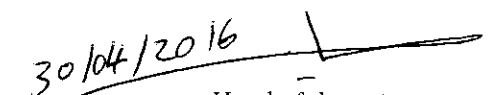


1. Determine the range of R_L and I_L that will result in V_{RL} being maintained at 5 V.
2. Determine the maximum wattage rating of the diode. (25 Marks)

Good luck...


Lecturers
Marwa Jalcel & Ahmed Qaiem




30/04/2016
Head of department
Laith Wajeeh

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى / الاتصالات
المادة : حقوق الانسان
زمن الامتحان : ساعتان
التاريخ : ٢٨ / ٠٤ / ٢٠١٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

إمتحان الفصل الثاني - العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة الاجابة على جميع الاسئلة

س١/ اشرح الحقوق الاجتماعية الواردة في دستور العراق لسنة ٢٠٠٥ والقوانين النافذة. (٢٥ درجة)

س٢/ ان عدم تركيز السلطة بيد هيئة واحدة يشكل ضمانا من ضمانات حقوق الانسان ، ناقش ذلك. (٢٥ درجة)

س٣/ وضح مفهوم الديمقراطية ثم عدد صورها وتكلم عن كل صورة من صورها. (٢٥ درجة)

س٤/ اجب عن ما يلي (٢٥ درجة)

أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصحح الخطأ ان وجد .
١- ان مبدأ قانونية الجرائم والعقوبات من الوسائل الدستورية التي تساعد على حماية حقوق الانسان .

٢- نص دستور العراق لسنة ٢٠٠٥ على ان (لا تفرض الضرائب والرسوم ولا تعدل ولا تجبى ولا يعفى منها الا بقانون) .

٣- سار دستور العراق لسنة ٢٠٠٥ بالنسبة لحق الملكية باتجاه معاكس لما نصت عليه الدساتير التي شرعت بعد سنة ١٩٥٨ .

٤- حضرت المادة (١٢٦) من دستور العراق اجراء تعديل على الحقوق والحريات الا بعد دورتين متعاقبتين ، وبناء على موافقة الاغلبية المطلقة لأعضاء مجلس النواب عليه ، وموافقة الشعب بالاستفتاء العام ومصادقة رئيس الجمهورية .

٥- ان القواعد القانونية تتميز بالسمو الموضوعي على القواعد الدستورية على اساس انها القواعد الاعلى في البلد .

ب- اكمل العبارات الاتية بما يناسبها من الكلمات

١- من صور الوسائل الدستورية لحماية حقوق الانسان هي،.....

٢- نص الدستور العراقي لسنة ٢٠٠٥ في المادة (٢٠) منه على ان (للمواطنين رجالا ونساء حق المشاركة في الشؤون العامة والتمتع بالحقوق السياسية بما فيها حق التصويت والانتخاب و.....) .

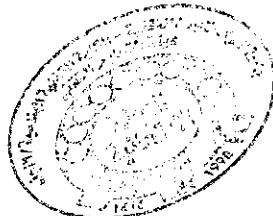
٣- من مظاهر مبدأ الحق في المساواة هي ،

٤- لا يسري القانون الجنائي بأثر رجعي الا اذا كان

٥- ان القواعد الدستورية تتسم بالوضوح والدقة والتحديد مما يؤدي الى ضمان حقوق الافراد وحرياتهم .

28/04/2016

رئيس القسم: ليث وجيه عبد الله



مدرس المادة : حيدر عبد الجليل

القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: حاسبة
زمن الامتحان: ساعتان
التاريخ: 27/4/2016



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

إمتحان الفصل الثاني- العام الدراسي 2015/2016

NOTE: ANSWER ALL QUESTIONS

Q1\ Define the following (answer five only).

(20Marks)

- | | | |
|----------------|--------------|-----------------|
| 1. Desk top | 2. Password | 3. Screen saver |
| 4. Recycle bin | 5. The Paint | 6. Formatting |

Q2\ Write the types of viruses and explain how can virus spread.

(20Marks)

Q3\ How can you :

(12Marks)

1. Make the task bar hidden?
2. Make the task bar on the right of screen?
3. Change the mouse pointer?
4. Change the background with your picture?

Q4\ What are the contents of Appearance and personalization, explain two of them.

(20Marks)

Q5\ What are the contents of task bar? explain them.

(12Marks)

Q6\ Explain how can you change language and time.

(8Marks)

Q7\ What is system restore? How can you create a restore point?

(8Marks)

GOOD LUCK

27/04/2016

Head of department
L. WAJEEH



Examiner
I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ساعتان
التاريخ : ٢٠١٦/٠٤/٢٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الفصل الأول- العام الدراسي ٢٠١٦/٢٠١٥

Answer all questions

Q1:- find any **five** of the following indefinite integrals: (30 MARKS)

1) $\int \frac{2 dx}{\sqrt{x}(1+x^2)}$

3) $\int \frac{\sinh x dx}{\cosh^4 x}$

5) $\int \frac{\sin x \cdot e^{\sec x} dx}{\cos^2 x}$

2) $\int \frac{dx}{e^{3x}}$

4) $\int \frac{\tan^{-1} x dx}{1+x^2}$

6) $\int \frac{x+1}{x-1} dx$

Q2:A:-show that the functions: (15MARKS)
 $X = \frac{-2}{\sqrt{3}} \sinh \frac{t}{\sqrt{3}}$ and $y = \frac{1}{\sqrt{3}} \sinh \frac{t}{\sqrt{3}} + \cosh \frac{t}{\sqrt{3}}$

Taken together. Satisfy the differential equation: $\frac{dx}{dt} + 2 \frac{dy}{dt} + x = 0$

Q2:B:-Evaluate any **one** of the following : (integration by parts) (13MARKS)

1) $\int \sin^{-1} ax dx$

2) $\int \frac{x dx}{e^x}$

Q2:C:-use **chain rule** find $\frac{dy}{dx}$ of any one of the following functions: (12MARKS)

1) $y = \frac{u^2}{u^2+1}$ and $u = 3x^3 - 2$

2) $y = \sqrt{u} + u$ and $u = x^2 + 3$

Q3:-find derivative for **five** of the following functions: (30 MARKS)

1) $y = \ln \sqrt{\frac{x-1}{x+1}}$

4) $y = \cos^{-3}(5x^2 + 2)$

2) $y = (\csc x + \cot x)^2$

5) $y = \operatorname{csch} \frac{1}{x}$

3) $y = x \ln (\sec^{-1} x)$

6) $y = 2 \cosh^{-1} \frac{x}{2} + \frac{x}{2} \sqrt{x^2 - 4}$

26/04/2016

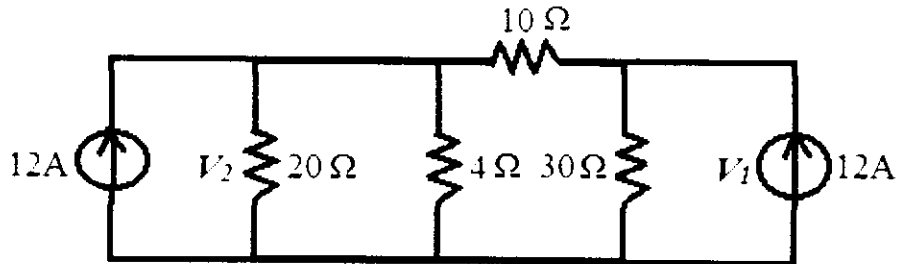
MOD.
Lathi wajeed

Lecturer:
Hussein M. Kamz

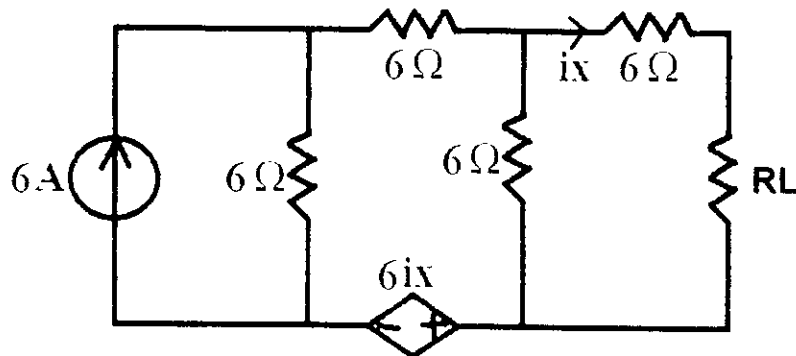
Lecturer:
Hussein F. Abd

Q1:- Use superposition theorem to find V_1 and V_2 .

(25Marks)

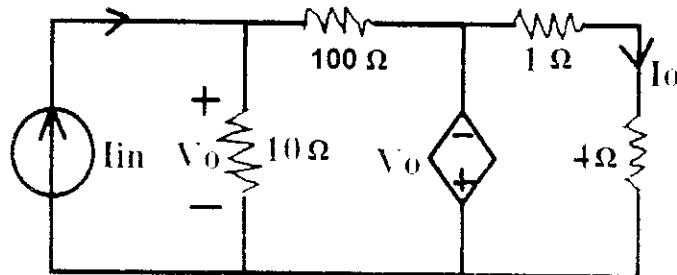


Q2:-Find the value of the resistor (R_L) that delivers maximum power dissipation. (25 Marks)

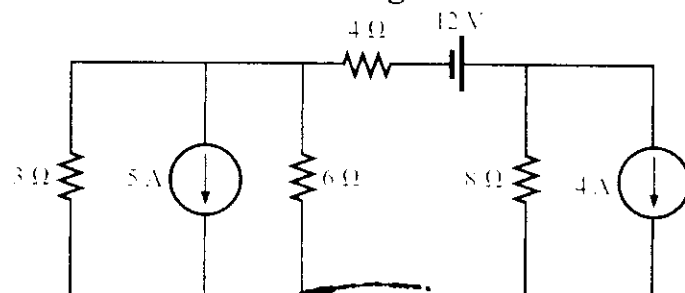


Q3: Use Nodal analysis to find the ratio (I_o/I_{in})

(25 Marks)



Q4:- Using source transformation method, reduce the following network to a single current source, and calculate the current through each resistor. (25 Marks)





Note: Answer all questions

Q1/ A-Design a circuit to perform the function indicated in the figure below

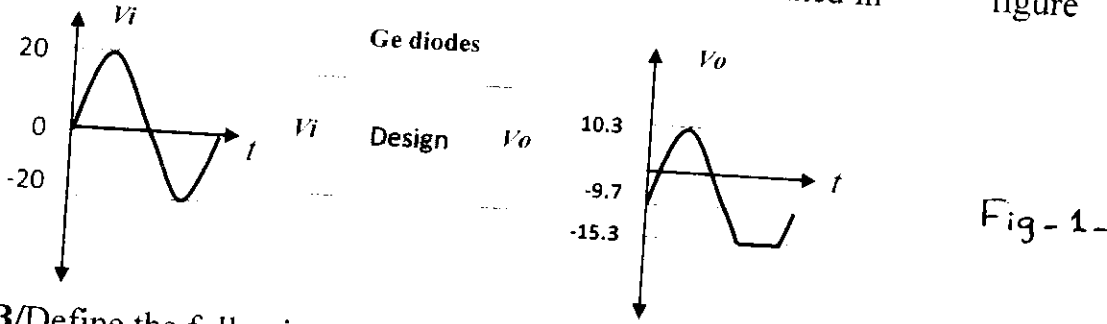


Fig-1-

B/Define the followings

(11 marks)

1. Dynamic resistance

2. Barrier potential

3. Band gap

(9 marks)

Q2/A-For circuit of Fig-2; Find

1. Minimum value of R.
2. V_o .

If you know $V_Z = 15V$ and $P_{Z_{max}} = 9W$

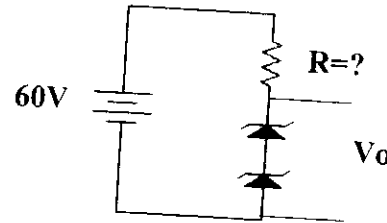


Fig-2-

(10 marks)

B-Choose one of the followings

1. Determine the diode current at $30^\circ C$ for a silicon diode with $I_S = 20nA$ and an applied forward bias of $0.9V$. ($K = 11600/2$)
2. Compare between silicon and germanium atoms.

(10 marks)

Q3/ For circuit of Fig-3-

- a) Show the voltage waveform across each half of the secondary winding **and** across R_L .
- b) Determine I_L .
- c) What minimum PIV rating must the diode have?
- d) If we connected a capacitor in parallel with R_L and the ripple factor was 2.5% what the value of this capacitor?

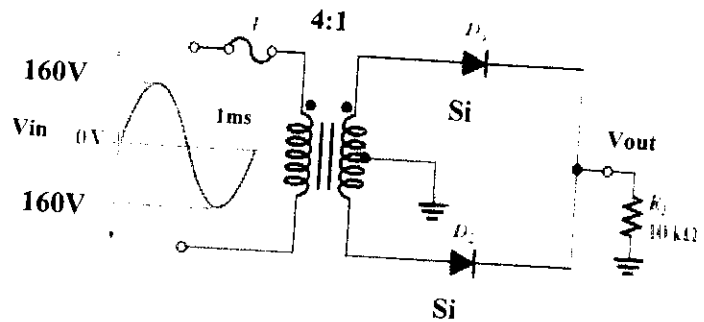


Fig-3-

(20 marks)

Q4/ For the network:

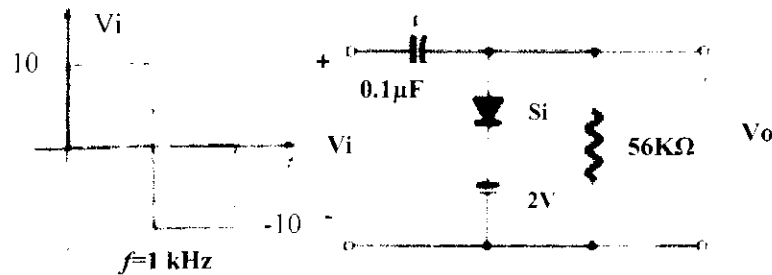


Fig - 4-

- Calculate 5τ .
 - Compare 5τ to half the period of the applied signal.
 - Sketch V_o .
 - Prove that the total swing of input wave is equal to total swing of output wave.
- (20marks)

Q5/ Answer only two of the following:

A- Determine the current I and V_R for each of the following configurations:

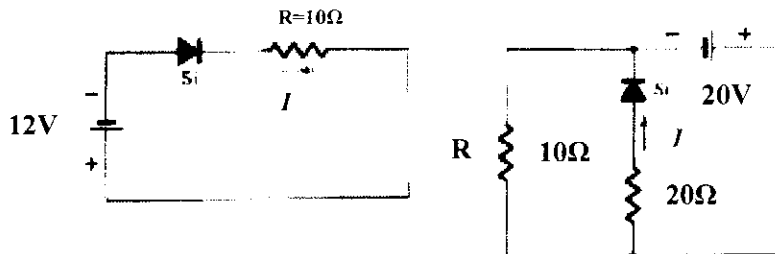


Fig- 5-

- Sketch and explain full wave voltage Doubler circuit.
 - Determine the range of values of V_i that will maintain the zener diode of figure below in the (on) state.
- (10marks)
(10marks)

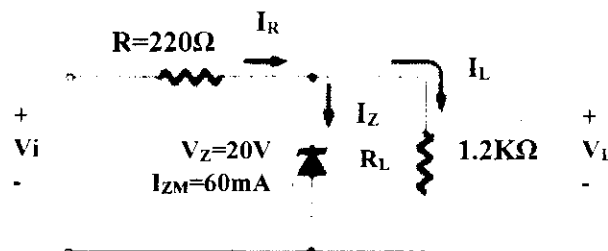


Fig- 6-

Good luck...

Lecturers

Marwa Jaleel & Ahmed Qaiem

28/05/2016

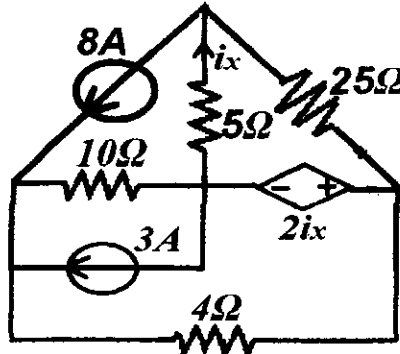
Head of department

Laith Wajeeh

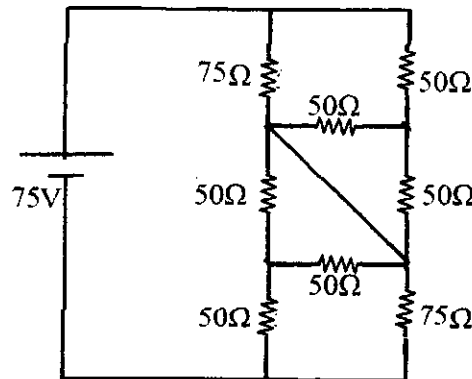


يسمح للطلبة باستخدام أي حاسبة علمية

Q1:- Using Kirchhoff's laws, find the voltage across ($5\ \Omega$) resistor. (20Marks)



Q2:- Find the total resistance and total current (20 Marks)



Q3: Use Thevenin's theorem to find the voltage across $4\ \Omega$ resistor. Explain whether the resistance $4\ \Omega$ receives the maximum power from the source (20 Marks)

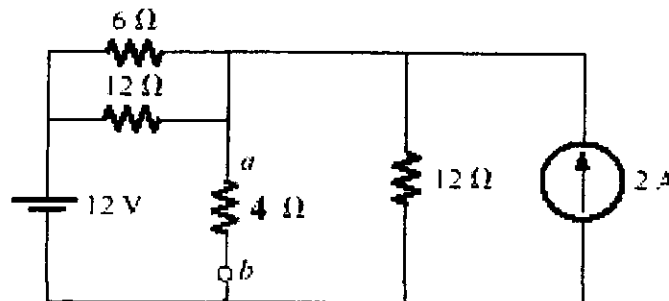
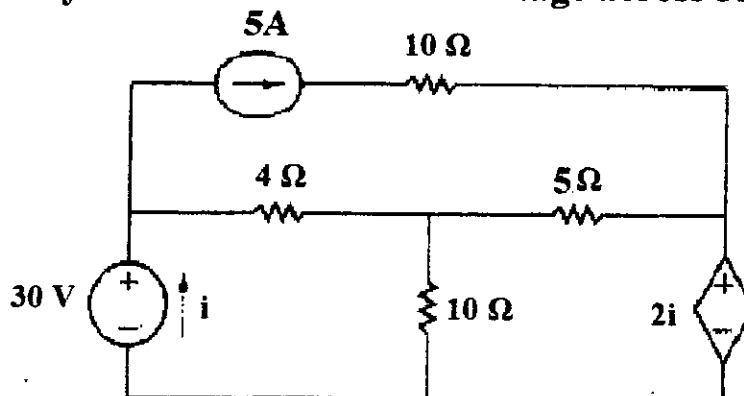


Fig. 1

Q:4- Apply Nodal analysis method to find the voltage across $5\ \Omega$ resistor (20 Marks)

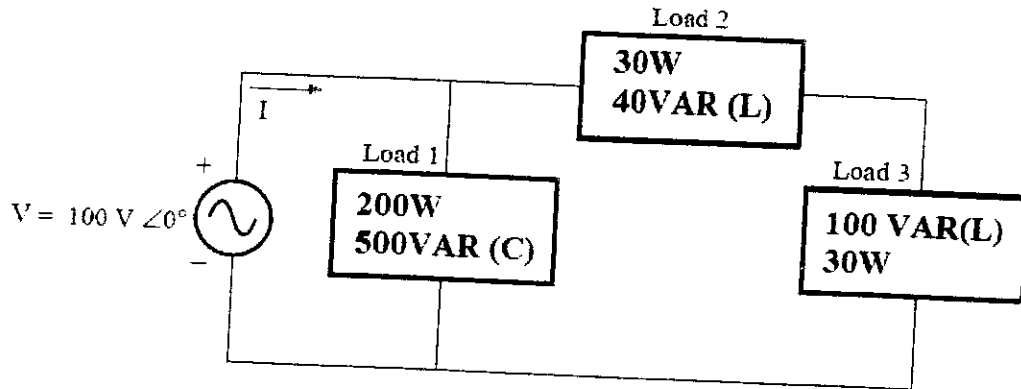


Q5:- Answer one branch:

A- For the system shown in the figure below, find:

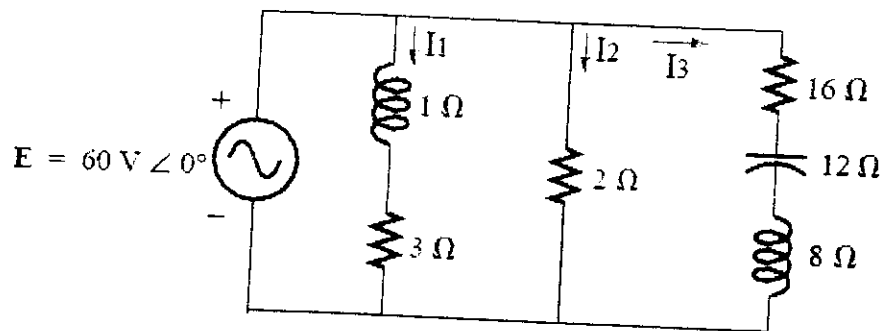
- 1- Total power (**P**), total reactive power (**Q**), total apparent power (**S**), and total power factor (**PF**). Sketch the total **power triangle**.
- 2- Find the source current (**I**).

(20 Marks)



B- For the network below, find the total impedance (Z_T), I_1 , I_2 , and I_3 .

(20 Marks)



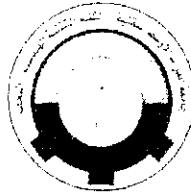
25/05/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: حاسبة
زمن الامتحان: ثلاث ساعات
التاريخ 30/5/2016



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحانات النهائية (الدور الاول) - العام الدراسي 2015/2016

NOTE: ANSWER ALL QUESTIONS

Q1\ Computer is a part of information system, it consist of Hardware and Software.
Explain briefly the contents of them. (14 Marks)

Q2\ a: Answer by True or False, and correct the False one **without change underlined** words(**choose only five**). (15 Marks)

1. Input device is any machine capable of show information from computer and examples of it is RAM and ROM.
2. G Byte is 1024 byte.
3. The DOS command will format a floppy disk and transfer the system files is FORMAT A: /T.
4. The switch should be used in the DIR command to view files in all directories is /w.
5. FAT stands for File Activity Table
6. Maximum length of file name is 7 characters and maximum length of directory is 8 characters.

b: For each unit below give the corresponding number of byte(**choose only three**). (9Marks)

1. (1 KB)
2. (55 MB)
3. (20 GB)
4. (14 MB)

Q3\ Write the syntax in MS-DOS for the following(**choose only four**): (12 Marks)

- 1- To show all contents of drive E, that started by character F and ended by character D with extension started by B .
- 2- To change the date of computer to 1\1\2016.
- 3- To delete all files of directory AHMED that found on drive E.
- 4- To create a file on directory GG of Drive E and write on it (Good Morning).
- 5- To create the directory engineer in drive D and the prompt is E.

Q4\ What are The Features Distinguish between MS-DOS and MS Windows. (20 Marks)

Q5\ What are the basic parts of virus programs? (16 Marks)

Q6\ What are the types of compressed file? Explain them briefly. (8 Marks)

Q7\ How can you delete a program from your computer? Give the steps only. (6 Marks)

GOOD LUCK

30/05/2016
Head of department
L.WAJEEH

Examiner
I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الأولى
المادة: مبادئ الرقمية
زمن الامتحان: ثلاث ساعات
التاريخ: 2016/6/1



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الدور الأول- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة: لا يسمح باستخدام الحاسبة العلمية

(40M)

Q1: choose the correct answer

1. Convert from decimal to binary $(578.7500)_{10}$?

a) 1001000010.11 b) 1001000100.001 c) 101000100.0100

2. Convert from binary to octal $(1011.01101)_2$

a) 13.46 b) 13.32 c) 13.54

3. Convert from hexadecimal to binary $(DB3.0A)_{16}$

a) 110010100101.00001001 b) 10011011001.0001010

c) 110110110011.00001010

4. Convert from octal to binary $(467.065)_8$

a) 100110111.000110101 b) 100011101010100.110101011

c) 111010100.00000110101

5. Convert from binary to decimal $(111001.11)_2$

a) 57.75 b) 53.72 c) 55.73

Q2:) Using Karnaugh map; simplify the following logic functions and draw logic circuit for two cases: (20M)

$F = \sum (7, 8, 9)$ and don't care condition $D = \sum (10, 11, 12, 13, 14, 15)$.

1. If the (don't care condition) taken in consideration.
2. If the (don't care condition) is not taken in consideration.

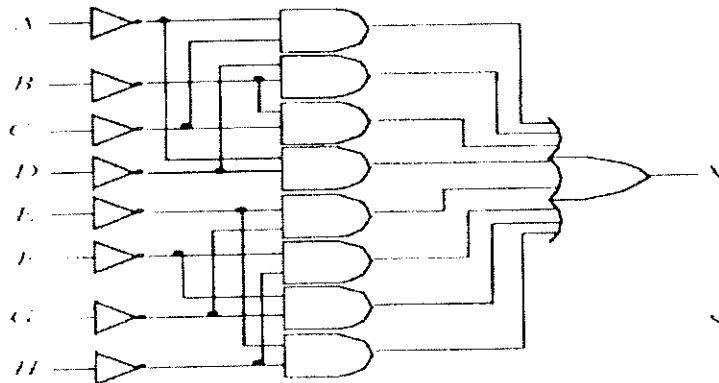
Q3: Answer one of the followings

(20M)

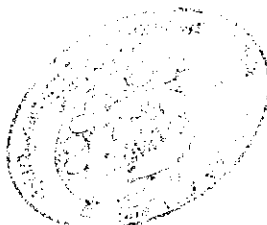
1. Draw the full adder block for (1101 and 101) and give the output
2. Draw the full substructure block for (1101 and 111) and give the output

Q4: Minimize the following logic circuit

(20M)

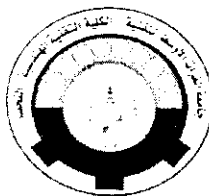


01/06/2016
رئيس القسم
ليث وجيه



مدرس امتحان
عبد الله علي

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٦/٤



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحان النهائي - العام الدراسي ٢٠١٥/٢٠١٦

Note:- Answer any (ten) questions (every question carry 10 Marks)

Q1:- Evaluate the following indefinite integrals:

1) $\int \frac{dx}{x\sqrt{x^2+4}}$ 2) $\int b \sec ax \cdot \tan ax \, dx$ 3) $\int \tanh^{-1}(\ln\sqrt{x}) \cdot \frac{dx}{x(1-\ln^2\sqrt{x})}$

Q2:A:- if $u = \ln 4x$ and $y = u^3$, use chain rule to find $\frac{dy}{dx}$

Q2:B:- find derivative for the following functions :

1) $f(x) = \ln x / x$ 2) $y = [\ln(x^2 + 2)]^3$

Q3:- Use tabular integration to find the following indefinite integrals:

1) $\int \frac{x \, dx}{e^x}$ 2) $\int x^3 \sin x \, dx$

Q4:- Simplify each expression :

1) $\frac{1+\cot\theta}{1+\tan\theta}$ 2) $\cos x \cot x + \sin x$

Q5:- find X, Y, Z if $A = \begin{bmatrix} 0 & 2Y & Z \\ X & Y & -Z \\ X & -Y & Z \end{bmatrix}$ satisfies $A^T = A^{-1}$

Q6:- Solve the following homogeneous system:

$3x + 2y + z = 0;$ $4x - y + z = 0;$ $-2x + 3y + 2z = 0.$

Q7:- Sketch the following functions:

1) $y = \sqrt{x}$ 2) $y = \tan x$

Q8:- Use definition differentiation to find $\frac{dy}{dx}$ of the following function $y = (3x + 5)^{-\frac{1}{2}}$

Q9:- Evaluate the following express: 1) $\cos^{-1}(-\sin\frac{\pi}{6})$ 2) $\sin^{-1}1 - \sin^{-1}-1$

Q10:- Show that $y = 35x^4 - 30x^2 + 3$ satisfies $(1 - x^2)y'' - 2xy' + 20y = 0$

Q11:- Evaluate the following limits:-

1) $\lim_{x \rightarrow 0} \frac{x}{\tan 3x}$ 2) $\lim_{n \rightarrow \infty} \frac{1 + \sin n}{n}$ 3) $\lim_{x \rightarrow 2} \frac{\sqrt{x^2 + 5} - 3}{x^2 - 4}$

04/06/2016

HOD:
Laith wajeih

Lecturer:
Hassanin M. Hamza

Lecturer:
Hawraa F. Abd

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى / الاتصالات
المادة : حقوق الانسان
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٠٦/٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف
امتحان الدور الثاني (٢٠١٦) / ٢٠١٦

ملاحظة الاجابة على جميع الاسئلة

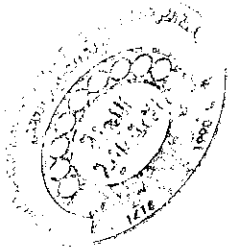
- س١/ اجب عن احد الفرعين ::
أ- عدد الحقوق الفكرية الواردة في دستور جمهورية العراق لسنة ٢٠٠٥ و اشرح اثنين فقط .
ب- عدد المبادئ الواردة في قانون العقوبات العراقي التي تشكل ضمانات لحقوق الانسان و اشرح اثنين فقط .
- س٢/ إن احدى صور الديمقراطية يمارس الشعب فيها جميع السلطات وضحتها ، ثم عدد و اشرح الصور الاخرى ، ثم تكلم عن ماهية الديمقراطية .
(٢٠ درجة)
- س٣/ اجب عن ما يلي ::
أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصحح الخطأ ان وجد لخمس فقط .
١- الارستقراطية تعني حكم الفرد الواحد .
٢- ارتبط مفهوم حقوق الانسان دائما بفكر سياسي متغير .
٣- لا يجوز ان يحكم بالاعدام على من يكون وقت ارتكاب الجريمة اتم الثامنة عشر من عمره ولم يتم العشرين من عمره .
٤- يعرف اصحاب المدارس الاجتماعية الحق بأنه سلطة يعترف بها القانون للفرد أو مصلحة يحميها القانون .
٥- نص دستور العراق لسنة ٢٠٠٥ على انه يحظر التملك لأغراض التغيير السكاني .
٦- ان نسبة تمثيل النساء في مجلس النواب العراقي لا تقل على ثلث اعضاء المجلس .
ب- تكلم عن الشخصية القانونية للإنسان .
- س٤/ اجب عن ما يلي ::
أ- املأ الفراغات بما يناسبها من الكلمات لخمس فقط .
١- ان الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ هي ،
٢- للشخصية الطبيعية محددات أو مميزات هي ،
٣- تتكون السلطات الاتحادية في العراق من السلطة التشريعية والسلطة التنفيذية والسلطة القضائية ، تمارس اختصاصاتها ومهامها على اساس
٤- من الشروط الواجب توافرها في المرشح لرئاسة الجمهورية العراقية ان يتم من العمر .
٥- يأتي التشريع العادي بعد وفقا لتدرج القواعد القانونية .
٦- من الافعال اللازمة لقيام جريمة الابادة الجماعية هي
ب- عدد الشروط الواجب توافرها في المرشح لعضوية مجلس النواب العراقي .
- س٥/ ان تطور السلطة ومن ثم الدولة يفرض وجود الدولة القانونية ، ناقش ذلك . (٢٠ درجة)

٠٦/٠٦/٢٠١٦
رئيس القسم: ليث وجيه عبد الله

مدرس المادة : حيدر عبد الجليل



المادة : الرسم الكهربائي
المرحلة : الاولى
الوقت : ثلاثة ساعات
التاريخ : 2016 / 6 / 8



الامتحان النهائي للعام الدراسي 2015 – 2016

Note: Answer four Questions only

Q1. Choose the correct answer which achieve the sentence for **five** of the following : (25 marks)

- To draw **arc** in Auto CAD program
a. writing A in command line b. choice arc icon c. from draw in menu tool bar d. a or b or c
- To draw circle tangent to three object by use method.
a. TTr b. TTT c. 2p d. 3p
- Writing **L** in command line use to
a. draw circle b. set up drawing borders c. set up drawing color d. draw line .
- Printing any drawing object by command
a. arc b. plot c. save d. writ .
- To draw **rectangle** in Auto CAD program at command line by write
a. r b. rect c. re d. rec .
- To save any drawing in Auto CAD program go to in command toolbar
a. format b. file c. view d. tools

Q2. What are the coordinates entry methods in Auto CAD program explain it and give example for each method.

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method). give sketh with dimentions for each one of the following.

(25 marks)

- rec : e : 2 : 2 : 0.0 ; @ 20,20 ;
- L : 0.0 ; @ 10.0 ; @ 5<45 ; @ 5<-45 ; @ 5<45 ; @ 5<315 ; @ 10<0 ;
- c : 100,100 ; d : 20 ; c : 100,100 ; 5 ;
- el : 100,100 ; @ 80,0 ; 40 ;
- circle : 2p : 1.4 : 4,4 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

- Draw a square with side length 10mm by using polygon command .
- Moving the square in section (1) for a distance 20 mm to right side.
- Draw upper half a circle with 25 mm in radius by using arc command.
- Draw a squar with side length of (100 mm) by using rectangle command.
- Draw upper half a circle with 25 mm in radius by using circle command.

Q5. Explain with graph the steps of inserting the electrical power symbols in Auto CAD workspace (give example) .

(25 marks)

GOOD LUCK

(Signature)

مدرس المادة
د.احمد حمودي علي

مدرس المادة
م.م. بلاسم عبد الأمير القرشي

08/06/2016
رئيس القسم
م.م. ليث وجيه

المادة : الرسم الكهربائي
المرحلة: الاولى
الوقت : ثلاثة ساعات
التاريخ : 2016/ 6 / 8



وزارة التعليم العالي والبحث العلمي
جامعة الفرات الاوسط التقنية
الكلية التقنية الهندسية / النجف
قسم هندسة تقنيات الاتصالات

الامتحان النهائي للعام الدراسي 2015 – 2016

Note: Answer four Questions only

Q1. Choose the correct answer which achieve the sentence for **five** of the following : (25 marks)

- To draw **arc** in Auto CAD program
☐ a. writing A in command line ☐ b. choice arc icon ☐ c. from draw in menu tool bar ☐ d. a or b or c
- To draw circle tangent to three object by use method.
☐ a. TTr ☐ b. TTT ☐ c. 2p ☐ d. 3p
- Writing **L** in command line use to
☐ a. draw circle ☐ b. set up drawing borders ☐ c. set up drawing color ☐ d. draw line .
- Printing any drawing object by command
☐ a. arc ☐ b. plot ☐ c. save ☐ d. writ .
- To draw **rectangle** in Auto CAD program at command line by write
☐ a. r ☐ b. rect ☐ c. re ☐ d. rec .
- To save any drawing in Auto CAD program go to in command toolbar
☐ a. format ☐ b. file ☐ c. view ☐ d. tools

Q2. What are the coordinates entry methods in Auto CAD program explain it and give example for each method.

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketh with dimentions for each one of the following.

(25 marks)

- rec : c : 2 : 2 : 0,0 ; @ 20,20 ;
- l : 0,0 ; @ 10,0 ; @ 5<45 ; @ 5<-45 ; @ 5<45 ; @ 5<315 ; @ 10<0 ;
- c : 100,100 ; d : 20 ; c : 100,100 ; 5 ;
- el : 100,100 ; @ 80,0 ; 40 ;
- circle : 2p : 1,4 ; 4,4 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

- Draw a square with side length 10mm by using polygon command .
- Moving the square in section (1) for a distance 20 mm to right side.
- Draw upper half a circle with 25 mm in radius by using arc command.
- Draw a squar with side length of (100 mm) by using rectangle command.
- Draw upper half a circle with 25 mm in radius by using circle command.

Q5. Explain with graph the steps of inserting the electrical power symbols in Auto CAD workspace (give example) .

(25 marks)

GOOD LUCK

Handwritten signature

مدرس المادة
د. احمد حمودي علي

مدرس المادة
م. م. بلاسم عبد الأمير القريشي

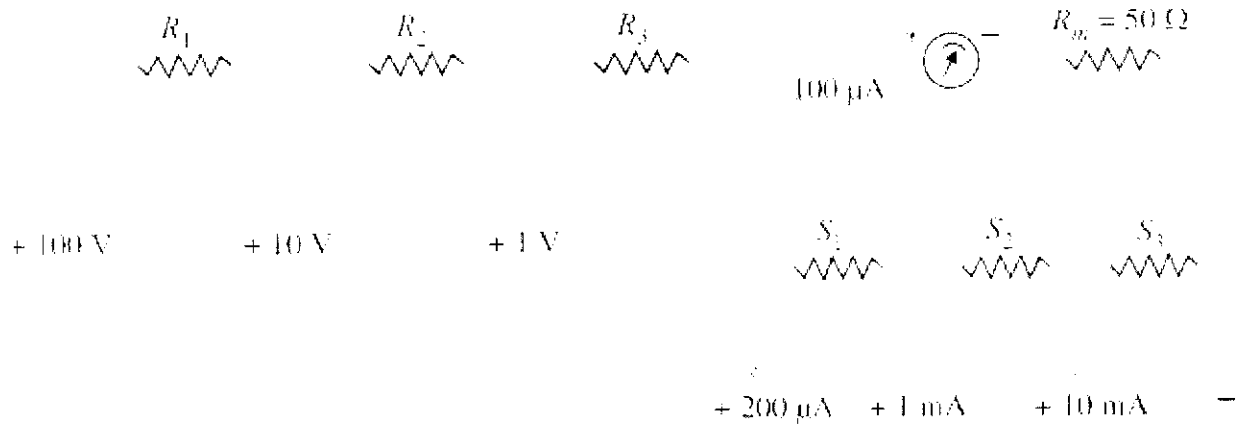
رئيس القسم
م. م. ليث وجيه

08/06/2016



Note: Attempt Four Questions only. For each question 25 marks.

Q1: A- For the figure bellow, describe in details the purpose of, and the operation procedure. (12 marks)



Q1: B- Compute the quantity of charge with mass of 9.11×10^{-31} kg at a specific time $t = 0.4$ second, moved along distance of 6 mm in vacuum. (13 marks)

Q2: A- Fill in the blanks. Select Five only (10 marks)

1. The vacuum tube multimeter can be defined as
2. The class length is
3. The mode is
4. The relative periodic can be given by:
5. The range is
6. The dispersion measurements can defined as

Q2: B- of the following: (15 marks)

For grouped and ungrouped data there are two different formulas. Use one of them to compute the mean for the following table.

Groups	Repetition
11-14	2
15-18	5
19-22	15
23-26	28
27-30	16
31-34	14



Q3: A- The multimeter can be used to measure the a.c. voltage. Explain this sentence in details. (10 marks)

Q3: B- Discuss the advantage and disadvantage of the multimeter. (15 marks)

Q4: A- Three range of voltmeter is arranged in (fig. 1) in your exam sheet. The ranges are 0 to 3 volt, 0 to 15 volt, and 0 to 50 volt as marked. If the full scale deflection current is 10 mA, what should be the values of R1, R2, and R3. Assume the resistance of the meter is 5 ohm. (15 marks)

Q4: B- Write (T) for true answer and (F) for false one and correct the wrong. Select two only. (10 marks)

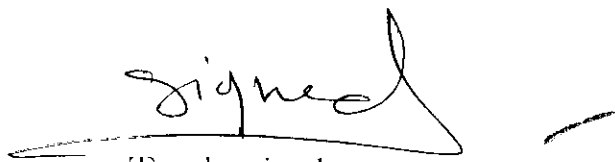
1. An ideal ammeter has an infinite resistance.
2. The voltmeter of range 10 V is likely to have the largest resistance.
3. A galvanometer of resistance G is shunted by a very small resistance S. The resistance of the resulting ammeter is (G-S).

Q5: A- Discuss the following in details: (select one only) (12 marks)

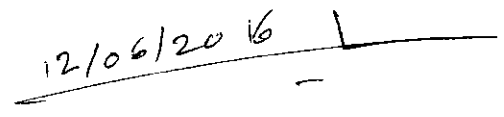
1. The sensitivity is the most important characteristics of a multimeter.
2. For the VTVM instrument circuit, if the applied voltages change (especially filament voltage) the plate current will also change. Consequently the meter will give the wrong reading.

Q5: B- In a very brief explanation, give, the general idea of the vacuum tube voltmeter operation procedure. (13 marks)

Good Luck For all


Teacher in charge

A.L. Hussam N. Al-Ansary


Head of Dept.

A.L. Laith W. Abdullah



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / النجف



قسم هندسة تقنيات الاتصالات

المرحلة الأولى

أسئلة الامتحان النهائي للعام الدراسي

٢٠١٦-٢٠١٥

الدور الأول

شعبة ضمان الجودة والإتقان بالجامعة



Note: Answer all questions

Q1/ A-Design a circuit to perform the function indicated in the figure below

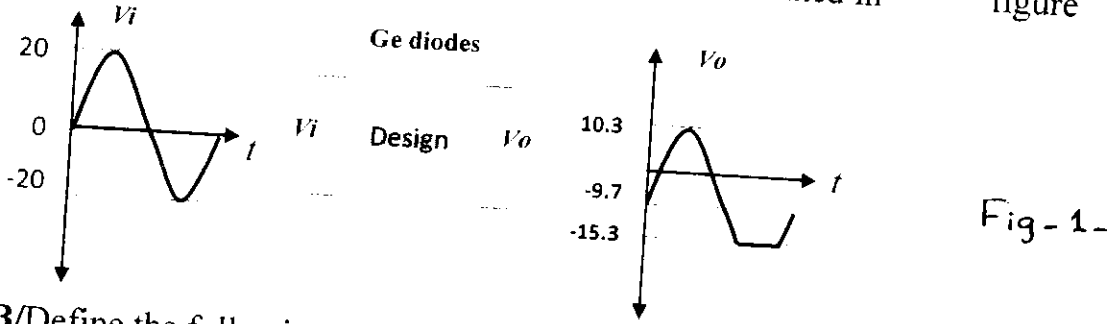


Fig-1-

B/Define the followings

(11 marks)

1. Dynamic resistance

2. Barrier potential

3. Band gap

(9 marks)

Q2/A-For circuit of Fig-2; Find

1. Minimum value of R.
2. V_o .

If you know $V_Z = 15V$ and $P_{Z_{max}} = 9W$

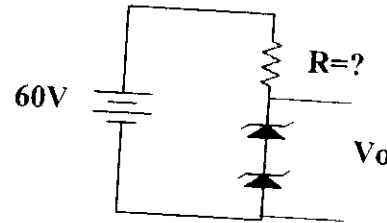


Fig-2-

(10 marks)

B-Choose one of the followings

1. Determine the diode current at $30^\circ C$ for a silicon diode with $I_S = 20nA$ and an applied forward bias of $0.9V$. ($K = 11600/2$)
2. Compare between silicon and germanium atoms.

(10 marks)

Q3/ For circuit of Fig-3-

- a) Show the voltage waveform across each half of the secondary winding **and** across R_L .
- b) Determine I_L .
- c) What minimum PIV rating must the diode have?
- d) If we connected a capacitor in parallel with R_L and the ripple factor was 2.5% what the value of this capacitor?

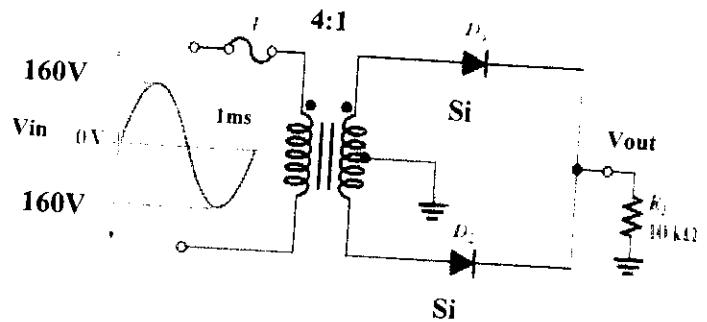


Fig-3-

(20 marks)

Q4/ For the network:

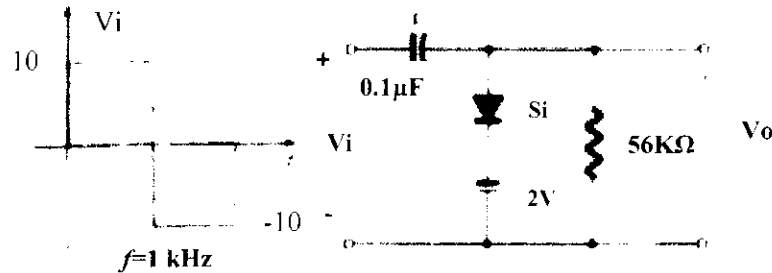


Fig - 4-

- Calculate 5τ .
 - Compare 5τ to half the period of the applied signal.
 - Sketch V_o .
 - Prove that the total swing of input wave is equal to total swing of output wave.
- (20marks)

Q5/ Answer only two of the following:

A- Determine the current I and V_R for each of the following configurations:

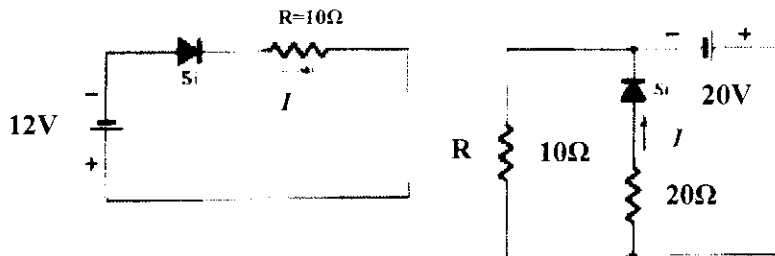


Fig- 5-

- Sketch and explain full wave voltage Doubler circuit.
 - Determine the range of values of V_i that will maintain the zener diode of figure below in the (on) state.
- (10marks)
(10marks)

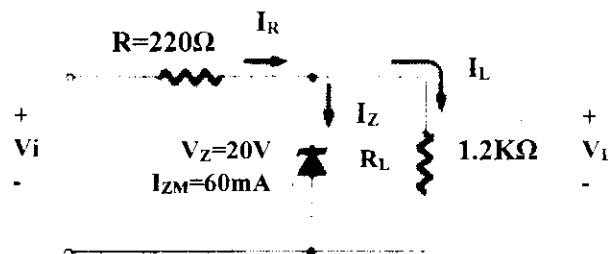


Fig- 6-

Good luck...

Lecturers

Marwa Jaleel & Ahmed Qaiem

28/05/2016

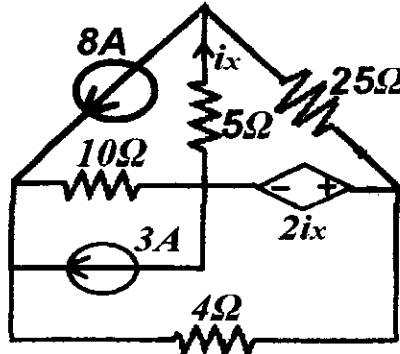
Head of department

Laith Wajeeh

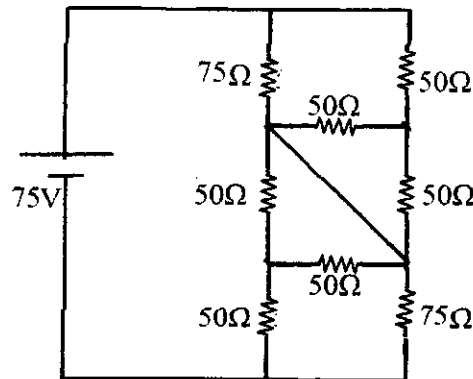


يسمح للطلبة باستخدام أي حاسبة علمية

Q1:- Using Kirchhoff's laws, find the voltage across ($5\ \Omega$) resistor. (20Marks)



Q2:- Find the total resistance and total current (20 Marks)



Q3: Use Thevenin's theorem to find the voltage across $4\ \Omega$ resistor. Explain whether the resistance $4\ \Omega$ receives the maximum power from the source (20 Marks)

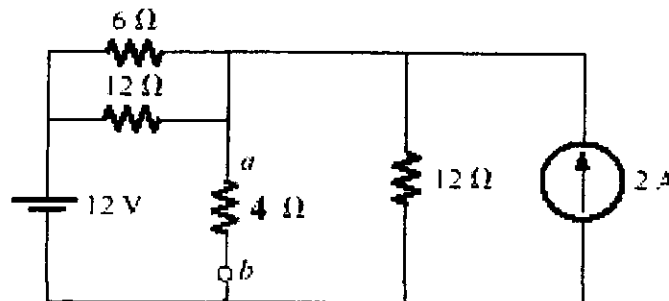
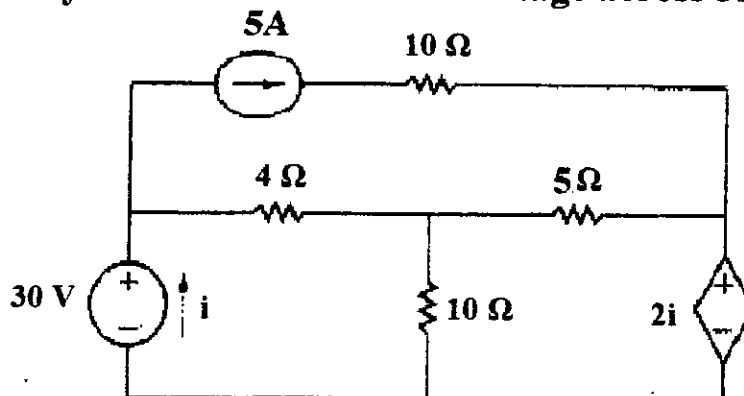


Fig. 1

Q:4- Apply Nodal analysis method to find the voltage across $5\ \Omega$ resistor (20 Marks)

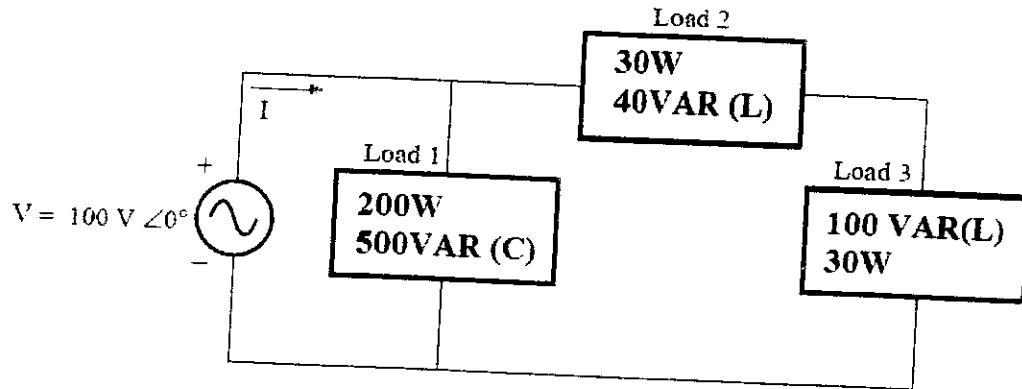


Q5:- Answer one branch:

A- For the system shown in the figure below, find:

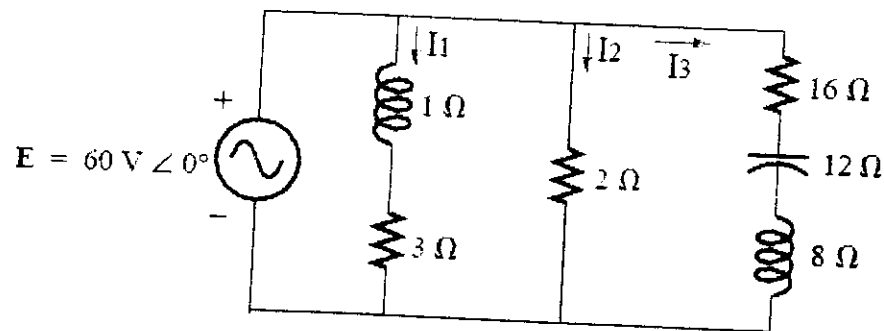
- 1- Total power (**P**), total reactive power (**Q**), total apparent power (**S**), and total power factor (**PF**). Sketch the total **power triangle**.
- 2- Find the source current (**I**).

(20 Marks)



B- For the network below, find the total impedance (Z_T), I_1 , I_2 , and I_3 .

(20 Marks)



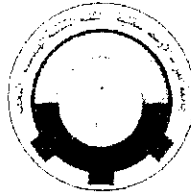
25/05/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



القسم : هندسة تقنيات الاتصالات
المرحلة: الاولى
المادة: حاسبة
زمن الامتحان: ثلاث ساعات
التاريخ 30/5/2016



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحانات النهائية (الدور الاول) - العام الدراسي 2015/2016

NOTE: ANSWER ALL QUESTIONS

Q1\ Computer is a part of information system, it consist of Hardware and Software.
Explain briefly the contents of them. (14 Marks)

Q2\ a: Answer by True or False, and correct the False one **without change underlined** words(**choose only five**). (15 Marks)

1. Input device is any machine capable of show information from computer and examples of it is RAM and ROM.
2. G Byte is 1024 byte.
3. The DOS command will format a floppy disk and transfer the system files is FORMAT A: /T.
4. The switch should be used in the DIR command to view files in all directories is /w.
5. FAT stands for File Activity Table
6. Maximum length of file name is 7 characters and maximum length of directory is 8 characters.

b: For each unit below give the corresponding number of byte(**choose only three**). (9Marks)

1. (1 KB)
2. (55 MB)
3. (20 GB)
4. (14 MB)

Q3\ Write the syntax in MS-DOS for the following(**choose only four**): (12 Marks)

- 1- To show all contents of drive E, that started by character F and ended by character D with extension started by B .
- 2- To change the date of computer to 1\1\2016.
- 3- To delete all files of directory AHMED that found on drive E.
- 4- To create a file on directory GG of Drive E and write on it (Good Morning).
- 5- To create the directory engineer in drive D and the prompt is E.

Q4\ What are The Features Distinguish between MS-DOS and MS Windows. (20 Marks)

Q5\ What are the basic parts of virus programs? (16 Marks)

Q6\ What are the types of compressed file? Explain them briefly. (8 Marks)

Q7\ How can you delete a program from your computer? Give the steps only. (6 Marks)

GOOD LUCK

30/05/2016
Head of department
L.WAJEEH

Examiner
I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الأولى
المادة: مبادئ الرقمية
زمن الامتحان: ثلاث ساعات
التاريخ: 2016/6/1



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان الدور الأول- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة: لا يسمح باستخدام الحاسبة العلمية

(40M)

Q1: choose the correct answer

1. Convert from decimal to binary $(578.7500)_{10}$?

a) 1001000010.11 b) 1001000100.001 c) 101000100.0100

2. Convert from binary to octal $(1011.01101)_2$

a) 13.46 b) 13.32 c) 13.54

3. Convert from hexadecimal to binary $(DB3.0A)_{16}$

a) 110010100101.00001001 b) 10011011001.0001010

c) 110110110011.00001010

4. Convert from octal to binary $(467.065)_8$

a) 100110111.000110101 b) 100011101010100.110101011

c) 111010100.00000110101

5. Convert from binary to decimal $(111001.11)_2$

a) 57.75 b) 53.72 c) 55.73

Q2:) Using Karnaugh map; simplify the following logic functions and draw logic circuit for two cases: (20M)

$F = \sum (7, 8, 9)$ and don't care condition $D = \sum (10, 11, 12, 13, 14, 15)$.

1. If the (don't care condition) taken in consideration.
2. If the (don't care condition) is not taken in consideration.

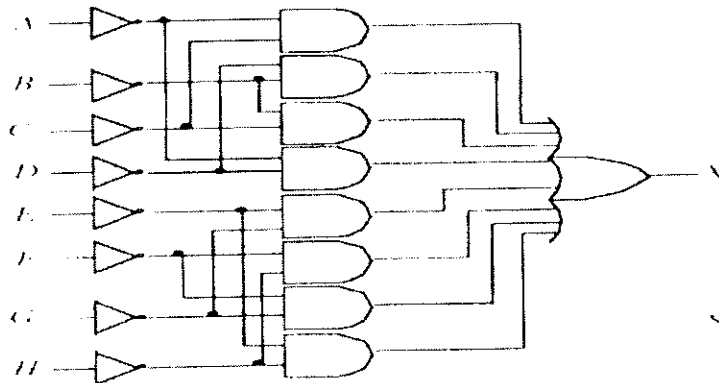
Q3: Answer one of the followings

(20M)

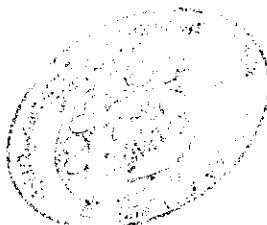
1. Draw the full adder block for (1101 and 101) and give the output
2. Draw the full substructure block for (1101 and 111) and give the output

Q4: Minimize the following logic circuit

(20M)



01/06/2016
رئيس القسم
ليث وجيه



مدرس امتحان
عبد الله علي

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٦/٤



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحان النهائي - العام الدراسي ٢٠١٥/٢٠١٦

Note:- Answer any (ten) questions (every question carry 10 Marks)

Q1:- Evaluate the following indefinite integrals:

1) $\int \frac{dx}{x\sqrt{x^2+4}}$ 2) $\int b \sec ax \cdot \tan ax \, dx$ 3) $\int \tanh^{-1}(\ln\sqrt{x}) \cdot \frac{dx}{x(1-\ln^2\sqrt{x})}$

Q2:A:- if $u = \ln 4x$ and $y = u^3$, use chain rule to find $\frac{dy}{dx}$

Q2:B:- find derivative for the following functions :

1) $f(x) = \ln x / x$ 2) $y = [\ln(x^2 + 2)]^3$

Q3:- Use tabular integration to find the following indefinite integrals:

1) $\int \frac{x \, dx}{e^x}$ 2) $\int x^3 \sin x \, dx$

Q4:- Simplify each expression :

1) $\frac{1+\cot\theta}{1+\tan\theta}$ 2) $\cos x \cot x + \sin x$

Q5:- find X,Y,Z if $A = \begin{bmatrix} 0 & 2Y & Z \\ X & Y & -Z \\ X & -Y & Z \end{bmatrix}$ satisfies $A^T = A^{-1}$

Q6:- Solve the following homogeneous system:

$3x + 2y + z = 0;$ $4x - y + z = 0;$ $-2x + 3y + 2z = 0.$

Q7:- Sketch the following functions:

1) $y = \sqrt{x}$ 2) $y = \tan x$

Q8:- Use definition differentiation to find $\frac{dy}{dx}$ of the following function $y = (3x + 5)^{-\frac{1}{2}}$

Q9:- Evaluate the following express: 1) $\cos^{-1}(-\sin\frac{\pi}{6})$ 2) $\sin^{-1}1 - \sin^{-1}-1$

Q10:- Show that $y = 35x^4 - 30x^2 + 3$ satisfies $(1 - x^2)y'' - 2xy' + 20y = 0$

Q11:- Evaluate the following limits:-

1) $\lim_{x \rightarrow 0} \frac{x}{\tan 3x}$ 2) $\lim_{n \rightarrow \infty} \frac{1 + \sin n}{n}$ 3) $\lim_{x \rightarrow 2} \frac{\sqrt{x^2+5}-3}{x^2-4}$

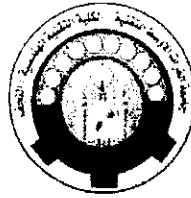
04/06/2016

HOD:
Laith wajeih

Lecturer:
Hassanin M. Hamza

Lecturer:
Hawraa F. Abd

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى / الاتصالات
المادة : حقوق الانسان
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٠٦/٦



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف
امتحان الدور الثاني (٢٠١٦/٠٦/٠٦)

ملاحظة الاجابة على جميع الاسئلة

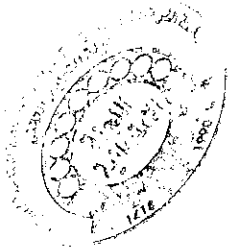
- س١/ اجب عن احد الفرعين ::
أ- عدد الحقوق الفكرية الواردة في دستور جمهورية العراق لسنة ٢٠٠٥ و اشرح اثنين فقط .
ب- عدد المبادئ الواردة في قانون العقوبات العراقي التي تشكل ضمانات لحقوق الانسان و اشرح اثنين فقط .
- س٢/ إن احدى صور الديمقراطية يمارس الشعب فيها جميع السلطات وضحتها ، ثم عدد و اشرح الصور الاخرى ، ثم تكلم عن ماهية الديمقراطية .
(٢٠ درجة)
- س٣/ اجب عن ما يلي ::
أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصحح الخطأ ان وجد لخمس فقط .
١- الارستقراطية تعني حكم الفرد الواحد .
٢- ارتبط مفهوم حقوق الانسان دائما بفكر سياسي متغير .
٣- لا يجوز ان يحكم بالاعدام على من يكون وقت ارتكاب الجريمة اتم الثامنة عشر من عمره ولم يتم العشرين من عمره .
٤- يعرف اصحاب المدارس الاجتماعية الحق بأنه سلطة يعترف بها القانون للفرد أو مصلحة يحميها القانون .
٥- نص دستور العراق لسنة ٢٠٠٥ على انه يحظر التملك لأغراض التغيير السكاني .
٦- ان نسبة تمثيل النساء في مجلس النواب العراقي لا تقل على ثلث اعضاء المجلس .
ب- تكلم عن الشخصية القانونية للإنسان .
- س٤/ اجب عن ما يلي ::
أ- املا الفراغات بما يناسبها من الكلمات لخمس فقط .
١- ان الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ هي ،
٢- للشخصية الطبيعية محددات أو مميزات هي ،
٣- تتكون السلطات الاتحادية في العراق من السلطة التشريعية والسلطة التنفيذية والسلطة القضائية ، تمارس اختصاصاتها ومهامها على اساس
٤- من الشروط الواجب توافرها في المرشح لرئاسة الجمهورية العراقية ان يتم من العمر .
٥- يأتي التشريع العادي بعد وفقا لتدرج القواعد القانونية .
٦- من الافعال اللازمة لقيام جريمة الابادة الجماعية هي
ب- عدد الشروط الواجب توافرها في المرشح لعضوية مجلس النواب العراقي .
- س٥/ ان تطور السلطة ومن ثم الدولة يفرض وجود الدولة القانونية ، ناقش ذلك . (٢٠ درجة)

٠٦/٠٦/٢٠١٦
رئيس القسم : ليث وجيه عبد الله

مدرس المادة : حيدر عبد الجليل



المادة : الرسم الكهربائي
المرحلة : الاولى
الوقت : ثلاثة ساعات
التاريخ : 2016 / 6 / 8



الامتحان النهائي للعام الدراسي 2015 – 2016

Note: Answer four Questions only

Q1. Choose the correct answer which achieve the sentence for **five** of the following : (25 marks)

- To draw **arc** in Auto CAD program
a. writing A in command line b. choice arc icon c. from draw in menu tool bar d. a or b or c
- To draw circle tangent to three object by use method.
a. TTr b. TTT c. 2p d. 3p
- Writing **L** in command line use to
a. draw circle b. set up drawing borders c. set up drawing color d. draw line .
- Printing any drawing object by command
a. arc b. plot c. save d. writ .
- To draw **rectangle** in Auto CAD program at command line by write
a. r b. rect c. re d. rec .
- To save any drawing in Auto CAD program go to in command toolbar
a. format b. file c. view d. tools

Q2. What are the coordinates entry methods in Auto CAD program explain it and give example for each method.

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketh with dimentions for each one of the following.

(25 marks)

- rec : e : 2 : 2 : 0.0 ; @ 20,20 ;
- L : 0.0 ; @ 10.0 ; @ 5<45 ; @ 5<-45 ; @ 5<45 ; @ 5<315 ; @ 10<0 ;
- c : 100,100 : d : 20 : c : 100,100 : 5 ;
- el : 100,100 : @ 80,0 : 40 ;
- circle : 2p : 1.4 : 4,4 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

- Draw a square with side length 10mm by using polygon command .
- Moving the square in section (1) for a distance 20 mm to right side.
- Draw upper half a circle with 25 mm in radius by using arc command.
- Draw a squar with side length of (100 mm) by using rectangle command.
- Draw upper half a circle with 25 mm in radius by using circle command.

Q5. Explain with graph the steps of inserting the electrical power symbols in Auto CAD workspace (give example) .

(25 marks)

GOOD LUCK

مدرس المادة
د.احمد حمودي علي

مدرس المادة
م.م. بلاسم عبد الأمير القرشي

08/06/2016
رئيس القسم
م.م. ليث وجيه

المادة : الرسم الكهربائي
المرحلة : الاولى
الوقت : ثلاثة ساعات
التاريخ : 2016 / 6 / 8



وزارة التعليم العالي والبحث العلمي
جامعة الفرات الاوسط التقنية
الكلية التقنية الهندسية / النجف
قسم هندسة تقنيات الاتصالات

الامتحان النهائي للعام الدراسي 2015 – 2016

Note: Answer four Questions only

Q1. Choose the correct answer which achieve the sentence for **five** of the following : (25 marks)

- To draw **arc** in Auto CAD program
☐ a. writing A in command line ☐ b. choice arc icon ☐ c. from draw in menu tool bar ☐ d. a or b or c
- To draw circle tangent to three object by use method.
☐ a. TTr ☐ b. TTT ☐ c. 2p ☐ d. 3p
- Writing **L** in command line use to
☐ a. draw circle ☐ b. set up drawing borders ☐ c. set up drawing color ☐ d. draw line .
- Printing any drawing object by command
☐ a. arc ☐ b. plot ☐ c. save ☐ d. writ .
- To draw **rectangle** in Auto CAD program at command line by write
☐ a. r ☐ b. rect ☐ c. re ☐ d. rec .
- To save any drawing in Auto CAD program go to in command toolbar
☐ a. format ☐ b. file ☐ c. view ☐ d. tools

Q2. What are the coordinates entry methods in Auto CAD program explain it and give example for each method.

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketh with dimentions for each one of the following.

(25 marks)

- rec : c : 2 : 2 : 0,0 ; @ 20,20 ;
- l : 0,0 ; @ 10,0 ; @ 5<45 ; @ 5<-45 ; @ 5<45 ; @ 5<315 ; @ 10<0 ;
- c : 100,100 ; d : 20 ; c : 100,100 ; 5 ;
- el : 100,100 ; @ 80,0 ; 40 ;
- circle : 2p : 1,4 ; 4,4 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

- Draw a square with side length 10mm by using polygon command .
- Moving the square in section (1) for a distance 20 mm to right side.
- Draw upper half a circle with 25 mm in radius by using arc command.
- Draw a squar with side length of (100 mm) by using rectangle command.
- Draw upper half a circle with 25 mm in radius by using circle command.

Q5. Explain with graph the steps of inserting the electrical power symbols in Auto CAD workspace (give example) .

(25 marks)

GOOD LUCK

Handwritten signature

مدرس المادة
د. احمد حمودي علي

مدرس المادة
م. م. بلاسم عبد الأمير القريشي

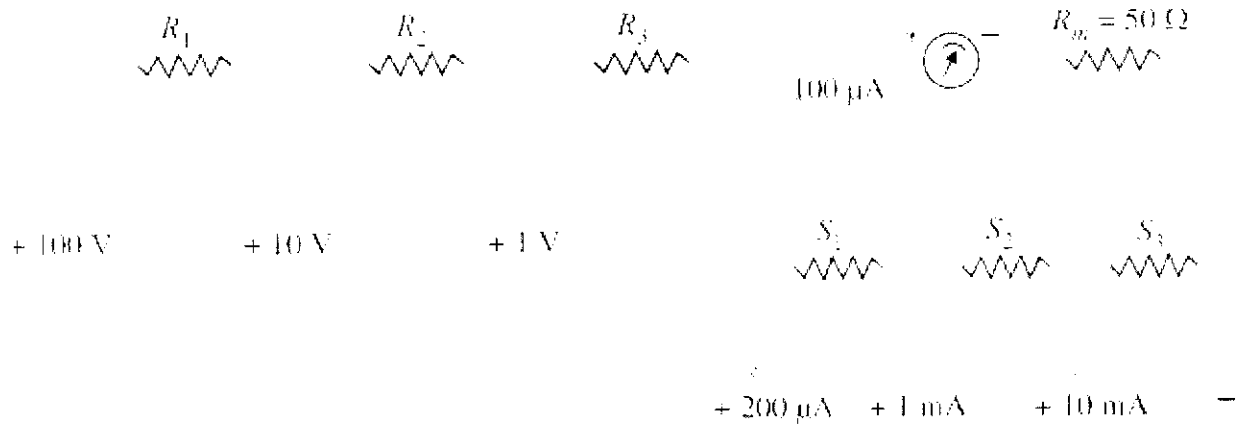
رئيس القسم
م. م. ليث وجيه

08/06/2016



Note: Attempt Four Questions only. For each question 25 marks.

Q1: A- For the figure bellow, describe in details the purpose of, and the operation procedure. (12 marks)



Q1: B- Compute the quantity of charge with mass of 9.11×10^{-31} kg at a specific time $t = 0.4$ second, moved along distance of 6 mm in vacuum. (13 marks)

Q2: A- Fill in the blanks. Select Five only (10 marks)

1. The vacuum tube multimeter can be defined as
2. The class length is
3. The mode is
4. The relative periodic can be given by:
5. The range is
6. The dispersion measurements can defined as

Q2: B- of the following: (15 marks)

For grouped and ungrouped data there are two different formulas. Use one of them to compute the mean for the following table.

Groups	Repetition
11-14	2
15-18	5
19-22	15
23-26	28
27-30	16
31-34	14



Q3: A- The multimeter can be used to measure the a.c. voltage. Explain this sentence in details. (10 marks)

Q3: B- Discuss the advantage and disadvantage of the multimeter. (15 marks)

Q4: A- Three range of voltmeter is arranged in (fig. 1) in your exam sheet. The ranges are 0 to 3 volt, 0 to 15 volt, and 0 to 50 volt as marked. If the full scale deflection current is 10 mA, what should be the values of R1, R2, and R3. Assume the resistance of the meter is 5 ohm. (15 marks)

Q4: B- Write (T) for true answer and (F) for false one and correct the wrong. Select two only. (10 marks)

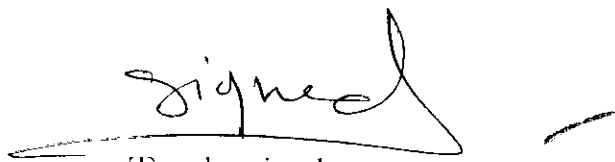
1. An ideal ammeter has an infinite resistance.
2. The voltmeter of range 10 V is likely to have the largest resistance.
3. A galvanometer of resistance G is shunted by a very small resistance S. The resistance of the resulting ammeter is (G-S).

Q5: A- Discuss the following in details: (select one only) (12 marks)

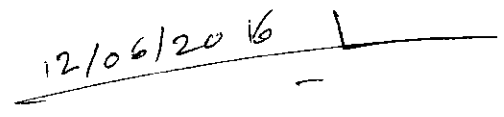
1. The sensitivity is the most important characteristics of a multimeter.
2. For the VTVM instrument circuit, if the applied voltages change (especially filament voltage) the plate current will also change. Consequently the meter will give the wrong reading.

Q5: B- In a very brief explanation, give, the general idea of the vacuum tube voltmeter operation procedure. (13 marks)

Good Luck For all


Teacher in charge

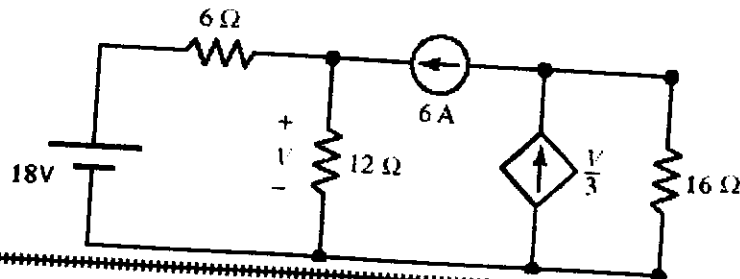
A.L. Hussam N. Al-Anssary


Head of Dept.

A.L. Laith W. Abdullah

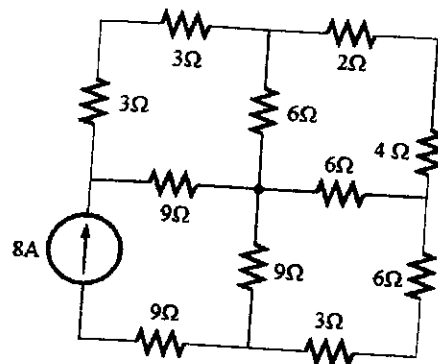
يسمح للطلبة باستخدام أي حاسبة علمية
Q1:- Determine the voltage across the 16Ω resistor with the application of Loop current method.

(20 Marks)



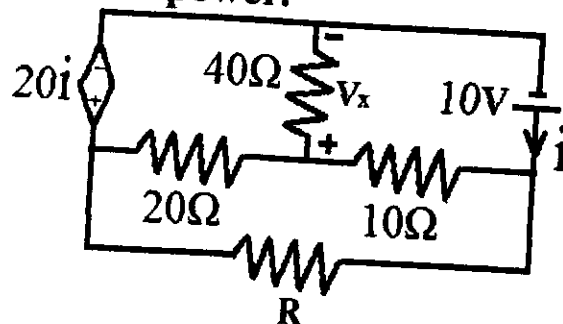
Q2:- Find the equivalent resistance and the power supplied by the current source.

(20Marks)



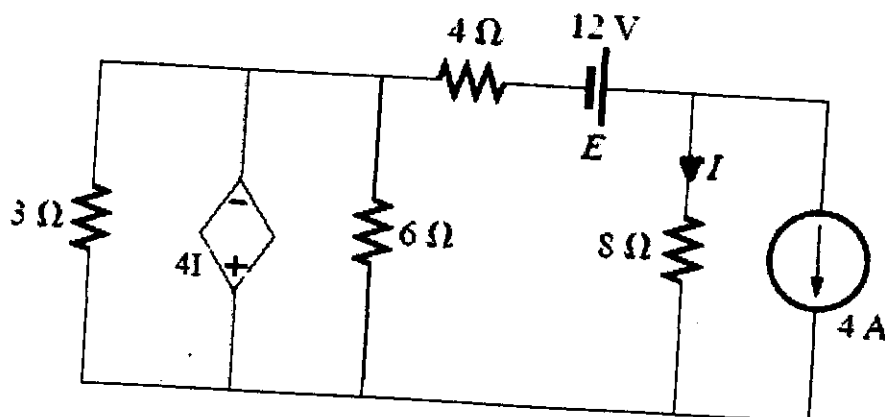
Q3:- Find the value of the resistor (R) that gives maximum power dissipation then determine the value of this power.

(20 Marks)



Q4:- Find the voltage across the 4Ω resistor by nodal analysis

(20 Marks)



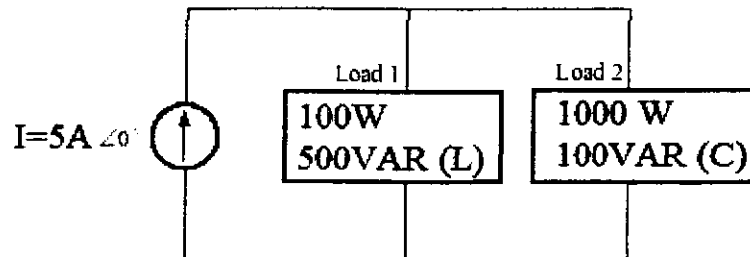
Q5:- Answer on branch:

A- For the system shown in the figure below, find:

1- Total power (**P**), total reactive power (**Q**), total apparent power (**S**), and total power factor (**PF**). Sketch the total power triangle.

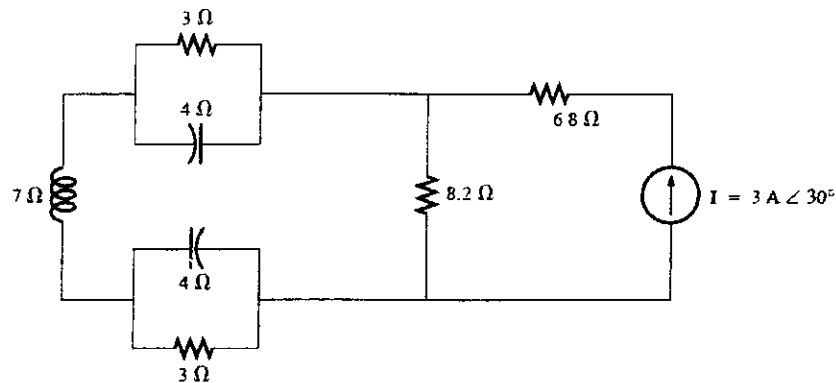
2- Find the total voltage.

(20 Marks)



B- For the network below, find the total impedance and Total voltage.

(20 Marks)



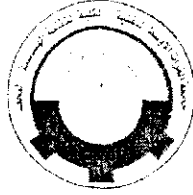
04/09/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : حقوق الانسان
زمن الامتحان : ٣ ساعة
التاريخ : ٢٠١٦/٠٩/٥



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان النهائي- الدور الثاني- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة الاجابة على جميع الاسئلة

س١/ في احدى صور الديمقراطية يرجع الى الشعب بالقضايا المهمة وضحاها ، ثم عدد وشرح صورها الاخرى ، ثم وضح ماهية الديمقراطية .
(٢٠ درجة)

س٢/ اجب عن احد الفرعين ::
(٢٠ درجة)

أ- تكلم عن الحق بالحياة بوصفه احد الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ .
ب- اشرح مفهوم الحق بالاصطلاح ، ثم عدد عناصره .

س٣/ عدد الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ و اشرح اثنين فقط . (٢٠ درجة)
س٤/ اجب عن احد الفرعين ::
(٢٠ درجة)

أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصح الخطأ ان وجد لخمس فقط .

١- يراد بأهلية الوجوب صلاحية الشخص لاكتساب الحقوق والالتزام بالواجبات .

٢- ان حرية الصحافة من الحقوق الاجتماعية الواردة في دستور العراق لسنة ٢٠٠٥ .

٣- تبدأ شخصية الانسان بتمام ولادته حيا وتنتهي بوفاة .

٤- في المساواة امام القانون نص الدستور العراقي على معايير عدة متشابهة لا يغني احدهما عن الاخرى .

٥- من الشروط الواجب توافرها لعضوية مجلس النواب العراقي ان يكون حاصلا على شهادة الاعدائية او ما يعادلها .

٦- ان الاتجاه الغالب بالوقت الحاضر هو الاخذ بالقواعد الدستورية العرفية .

ب- عدد الشروط الواجب توافرها في المرشح لرئاسة الجمهورية العراقية .

س٥/ اجب عن ما يلي ::
(٢٠ درجة)

أ- أملاً الفراغات بما يناسبها من الكلمات لخمس فقط .

١- من المبادئ الواردة في قانون العقوبات العراقي لحماية حقوق الانسان هي..... ،

٢- ان مبدأ الفصل بين السلطات ينبغي ان يكون

٣- مجموع ما للشخص من حقوق وما عليه من التزامات مالية .

٤- من الحقوق الفكرية الواردة في دستور العراق لسنة ٢٠٠٥ هي..... ،

٥- يشترط في المرشح لعضوية مجلس النواب العراقي ان لا يكون عضواً عند الترشيح .

٦- تعني حكم الفرد الواحد .

ب- تتسم القواعد الدستورية المدونة بالوضوح والدقة والتحديد ، ناقش ذلك .

65/69/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة : حيدر عبد الجليل



Note: Answer Only Four Questions. For each question 25 marks.

Q1: A- Define Four only from the following terms: (12 marks)

1. Accuracy.
2. Response.
3. Stability
4. Environment
5. Reliability.

Q1: B- Usually there are two types of variables. List these two types and explain one of them in details. (13 marks)

Q2: A- Convert the following data into a grouped data (progressively) then compute the truth bounders and the group center for them. (13 marks)

((13, 50, 22, 15, 20, 10, 26, 40, 33, 28, 19, 21, 36, 48, 30))

Q2: B- Compare between two standard class degrees of the same student in one exam and explain at any exam he had the batter mark. First exam degree = 62 and the standard deviation for the same exam is 18.2. For the second exam, the degree = 88, and the standard deviation is 13.3. (12 marks)

Q3: A- Discuss briefly the term : ((The multimeter as Voltmeter)). Give the most important equations you think you need, and draw a block diagram for the circuit you guess it is necessary. (13 marks)

Q3: B- Write (T) for the true sentence and (F) for the false one. (correct the wrong one)

1. Two multimeters A and B have sensitivities of 10 kΩ per volt and 30 kΩ per volt. Then the multimeter A is more sensitive from B. (prove your answer).
2. An ammeter should have very high internal resistance. (12 marks)

Q4: A- Prove that: $I = x^{\frac{3}{2}} m^{\frac{1}{2}} t^{-2} \epsilon_0^{\frac{1}{2}} A$. (10 marks)

Q4: B- Compute the value of the potential difference generated by an electron moving along straight line of length (0.5 cm) through 2μsec. Assume the electron charge is $1.6 \times 10^{-19} c$ and the electron mass is $9.1 \times 10^{-31} kg$. Assume also the path is in vacuum. (15 marks)

القسم : هندسة تقنيات الاتصالات

المرحلة : الأولى

المادة: قياسات كهربائية

زمن الامتحان: ثلاث ساعات

التاريخ: 2016/09/06



الامتحان النهائي – العام الدراسي ٢٠١٥ / ٢٠١٦

معلم العالي والبحث العلمي

التعليم التقني

جامعة الفرات الاوسط التقنية

الكلية الهندسية التقنية- نجف

Q5: A: Complete the following sentences with suitable words. (12 marks)

1. Output it was allowable values can
2. The average value of reading can be defined as the summation of reading
3. The precision can be given by:

Q5: B- Draw and sign the parts of the circuit for the following: (Select two only)

1. The full wave rectifier to measure a.c. voltage.
2. Multimeter as ammeter with three resistances.
3. Balanced bridge type VTVM.

(13 marks)

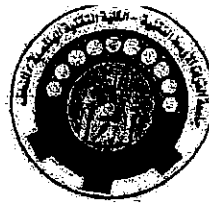
Good Luck 4 all of U

Teacher in charge

A. L. Hussam N. Al-Anssary

Head of dept.

A.L. Laith W. Abdullah



Notes/ 1. Answer all questions 2. All questions have equal marks

Q1/ How can you done the following jobs in Auto CAD program (write it by macro method):-

1. Draw a square inside circle (the side length is 10mm)
2. Copy the assemble in section (1) for a distance 40 mm to left side.
3. complete a half circle with 25 mm in radius.

Q2/ What is the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketch with dimensions for each one of the following.

1. L ; 100,100 ; @120,0 ; @120<120 ; @120<240
2. rect ; w ; 12 ; 100,100 ; 280,200 ;
3. c ; 115,50 ; d ; 46
4. a ; 150,110 ; 200,175 ; 250,108

Q3/ Choose the correct answer which achieve the sentence for the following : (20 marks)

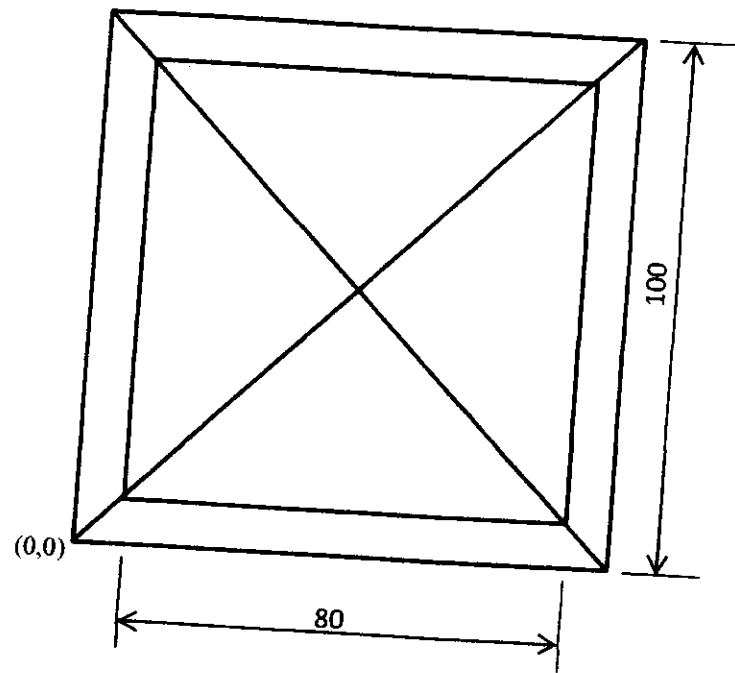
1. Auto CAD program one of the programs that used to
a. theoretical Analysis b. design analysis and drawing c. implemented solution d. formatting
 2. To draw polygon in Auto CAD program at command line by write
a. pol b. poly c. ply d. p .
 3. In order to draw lines with vertical and horizontal direction only, go to..... in command toolbar.
a. Mirror b. Ortho c. Object snap d. Trim
 4. There are options to draw a polygon in Auto CAD.
a. Two b. Four c. Six d. Eight
 6. Instruct that clean all the lines and figures on the screen is
a. erase b. trim c. chamfer d. mirror
- Q4/ How many way to draw a polygon with 10 sides in AutoCAD? Explain it with sketching.
- Q5. Write the basic steps to draw the following drawing :-

turer

Lecturer

(1 - 2)

Head of Department



(2 - 2)



The final exam for (2015-2016)

Group one: answer **four** only

Q1/ What are the system units of the computer? Explain it.(15 Marks)

Q2/ What are the main parts of computer? Explain it.(15 Marks)

Q3/ Explain the type of computers based on size.(15 Marks)

Q4/ What are the types of DOS files? Explain it.(15 Marks)

Q5/ Answer the following:(for **three** only)

1. 45 byte= -----bits
2. 58000 k bit =-----M byte
3. 87 G bit =-----k byte
4. 99Mbyte=-----bit(15 Marks)

Group two: answer **all** questions

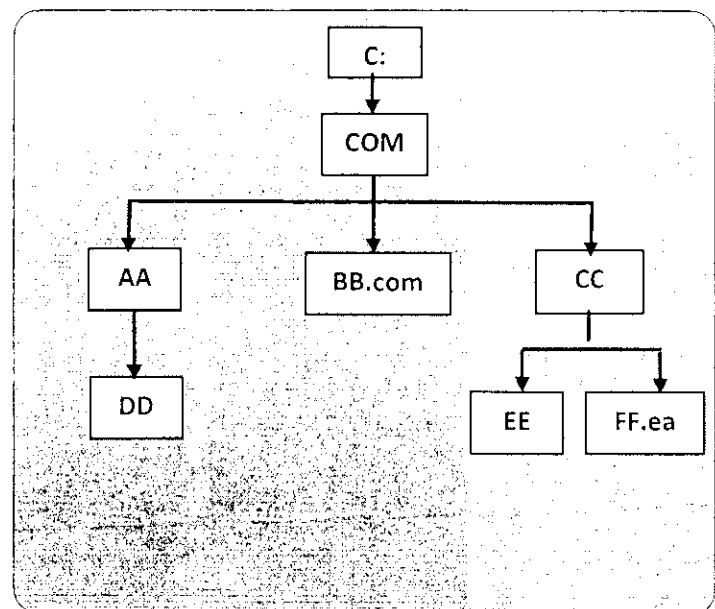
Q1/ Give the task and path of the following items:

Calculator , Notepad , Appearance and personalization , Music (20 Marks)

Q2/ Create the following tree by MS-DOS system:

1. Display all files that have extension (com).
2. Rename IIII and FF.ea.
3. Delete BB.com and CC.
4. Display the contents of AA in alphabetic form and as a page.
5. Create text file as ahmed.txt in (EE).

(20 Marks)



08/09/2016

Head of department

L.WAJEEN

Examiner

I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٩/١٩



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحان النهائي - العام الدراسي ٢٠١٥/٢٠١٦ / الدور الثاني

Note:- Answer any (**ten**) questions only (every question carry **10** Marks)

Q1:- Evaluate the following limits:-

1) $\lim_{x \rightarrow \infty} \frac{x \sin x}{(x + \sin x)^2}$

2) $\lim_{x \rightarrow 0} \left(\frac{1}{x} + 1 \right)^x$

Q2:- find $\frac{dy}{dx}$ of the following function(Use definition differentiation): $f(x) = \sqrt{3x}$

Q3:- find the following integrals (use integration by parts):

1) $\int x \cos x dx$

2) $\int x^3 \ln x$

Q4:- prove that:

a) $\frac{\cos 3x - \cos x}{\cos x + \cos 3x} = -\tan 2x \cdot \tan x$

b) $\tan^2(x) = \sin^2(x) \cdot \cos^{-2}(x)$

Q5:- Evaluate the following indefinite integrals:

1) $\int \sin ax \cos ax dx$

2) $\int \frac{dx}{x\sqrt{x^2+4}}$

3) $\int \tanh^{-1}(\ln \sqrt{x}) \cdot \frac{dx}{x(1-\ln^2 \sqrt{x})}$

Q6:- find the second derivatives for the following function: $f(x) = \sqrt{2x} + \frac{2\sqrt{2}}{\sqrt{x}}$ at $x = 2$

Q7:A:- find $\tan(A+B)$: If $\cos B = 12/13$ and $\sin A = 4/5$

Q7:B:- write the equation line at $x = 3$ of the curve: $y = \frac{1}{\sqrt{2x+3}}$

Q8:- if $A = \begin{bmatrix} -2 & 1 & 4 \\ 0 & 3 & 7 \\ 0 & 0 & 1 \end{bmatrix}$ find any values of α such that $\det(A - \alpha I) = 0$ (where I is identity matrix that's square matrix with ones in diagonal position and zeros else).

Q9:- find the domain and range for(**any two only**) functions:

a) $y = \frac{1}{\sqrt{3-x}}$

b) $y = \frac{1}{x^2+1}$

c) $\sqrt{x+4}$

Q10:A:- find derivative (**any one only**) for the following functions :

1) $y = \ln(\sec x + \tan x)$

2) $y = x + \tan(x, y)$

Q10:B:- If $u = 3x - 4$ and $y = u^7$ using the chain rule to find $\frac{dy}{dx}$

Q11:- solve the matrix to find X : $\begin{bmatrix} 8 & -3 \\ -5 & 2 \end{bmatrix} X = \begin{bmatrix} 4 & -1 \\ -3 & 1 \end{bmatrix}$

19/09/2016

-HOD:

Laith wajeih

Lecturer:

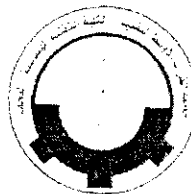
Hassanin M. Hamza

Lecturer:

Hawraa F. Abd

عيسى الرشيد
١/٤/٢٠١٦

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: مبادئ رقمية
زمن الامتحان: ٣ ساعة
التاريخ: ٢٠١٦/٠٩/٢١



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان النهائي- الدور الثاني- العام الدراسي ٢٠١٥/٢٠١٦

Q1 A : Convert the following number to bases decimal: **10M**

1) $(+310)_5$ 2) $(435)_8$ 3) $(198)_{12}$ 4) $(345)_6$

5) $(10110.0101)_2$ 6) $(16.5)_{16}$ 7) $(DADA.B)_{16}$

8) $(1010.1101)_2$

Q1/B// Convert the following binary numbers to hexadecimal and to decimal: **2.5M**

(a) 1.10010,

→ (b) 110.010.

Q1/c//: Convert decimal 27.315 to binary

2.5M

Q1/D//: Obtain the 1's and 2's complements of the following binary numbers: **5M**

(a) 00010000

(b) 00000000

(c) 11011010

(d) 10101010

Q2/Simplify the following Boolean expressions to a minimum number of literals: **5M**

1) $xy + x(wz + w\bar{z})$

2) $(A + \bar{A}B) ((\bar{A} + \bar{B} + C) (C) ((\bar{A} + \bar{B}))$

Q3// Expand the following functions as product of sum expressions:

$$f(A, B, C, D) = \prod(7; 12; 15)$$

$$f(A, B, C, D, E) = \prod(0; 16; 31)$$

5M

Q4/A//: Simplify the following Boolean functions, using K-maps: **10M**

1) $F(x, y, z) = \sum(1, 2, 3, 6, 7)$

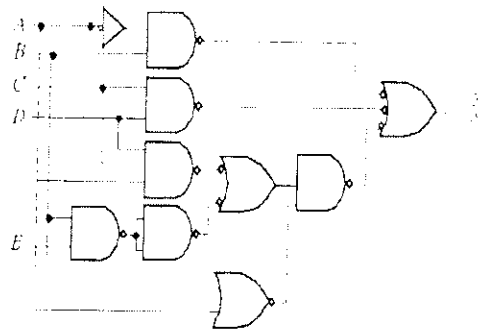
2) $\bar{x}\bar{y} + yz + \bar{x}y\bar{z}$

3) $A\bar{B}C + \bar{B}\bar{C}\bar{D} + BCD + A\bar{C}\bar{D} + \bar{A}\bar{B}C + \bar{A}B\bar{C}D$

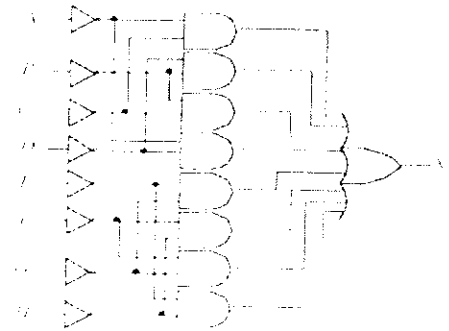
4) $F(w, x, y, z) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

Q4B// reduce and minimum terms

(25M)



(B)



(a)

Q5/A/ Apply DeMorgan's theorems to the following and draw the circuit:

(15M)

$$f = \overline{\overline{(A + B)} \overline{(C + D)} \overline{(E + F)} \overline{(G + H)}}$$

Q5/B// Draw block diagram shows the sum outputs when 1111 and 1101 are added by the 4-bit parallel adder

(5M)

Q5/C// Draw a block diagram for 4-bit parallel subtractor by using four units A= 1101 and B=1011

(5M)

Q6// Using Karnaugh maps simplify the following logic functions and draw logic circuit for two cases:

(10M).

- 1.If the (don't care condition) taken in consideration.
2. If the (don't care condition) not taken in consideration.

$$F = \sum (1, 5, 8, 10, 12) \text{ and don't care condition}$$

$$D = \sum (7, 9, 11, 13).$$

21/09/2016
 رئيس القسم
 لسانه



الامتحان النهائي للعام الدراسي 2015 – 2016 / المورائي

Q1. Fill in the blanks with appropriate for five of the following : (25 marks)

1. Auto CAD program one of the programs that help in
2. To change the drawing background go to in command toolbar
3. CAD refers to
4. Printing any drawing object by command
5. To draw rectangle in Auto CAD program at command line by write
6. Limit command use to

Q2. Explain with graph the steps of inserting the electrical symbols in Auto CAD workspace (give example) .

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketh with dimentions for each one of the following.

(25 marks)

1. rec : c : 2 : 2 : 0,0 : @ 20,20 ;
2. el : c : 50,50 : @ 50,0 : 50 ;
3. L : 0,0 : @10,0 : @5<45 ; @5<-45 ; @5<45 ; @ 5<315 ; @10<0 ;
4. c : 100,100 ; d : 20 ; c : 100,100 : 5 ;
5. el : 0,0 : @100,0 : 50 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

1. Draw a polygon with 8 sides (the side length is 10mm)
2. Moving the polygon in section (1) for a distance 20 mm to right side.
3. Draw upper half a circle with 25 mm in radius by using arc command.
4. Draw upper half a circle with 25 mm in radius by using circle command.
5. Draw a squar with side length of (100 mm) by using rectangle command.

GOOD LUCK

مدرس المادة
د. احمد حمودي علي

مدرس المادة
م. م. بلاسم عبد الأمير القريشي

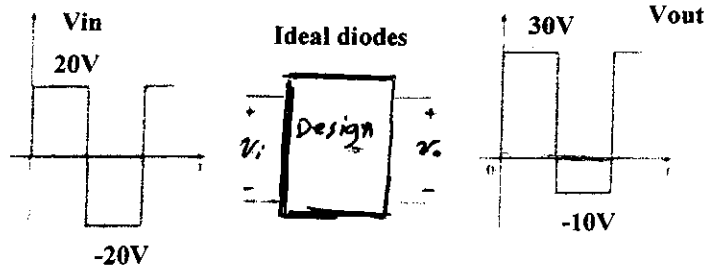
22/09/2016

رئيس القسم
م. م. ليث وجيه



Answer all questions

Q1/A-Design a circuit to perform the following function:

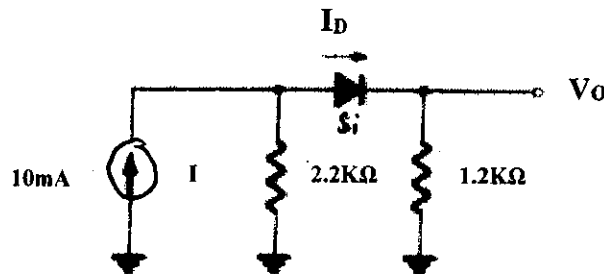


(12marks)

B- Explain the difference between the characteristics of natural diode and Zener diode?

(8marks)

Q2/A-Determine V_O and I_D for the network:



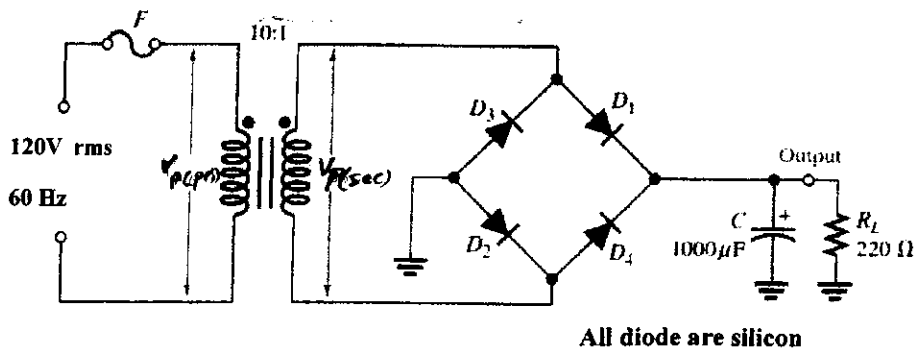
(11marks)

B- Define the followings:

1. Energy level
2. PN junction
3. Voltage multiplier circuits

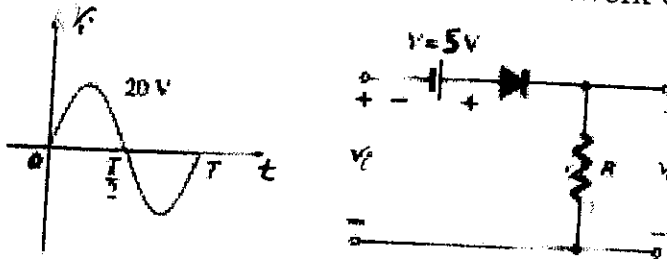
(9marks)

Q3/ Determine the ripple factor for the filtered bridge rectifier with a load as indicated in below figure



(20marks)

Q4/ A- Determine the output waveform for the network of figure below:

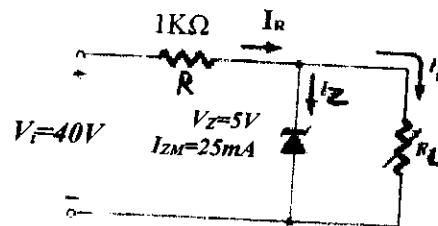


B/Explain the energy Diagram of PN Junction and Depletion region.

(10marks)

(10marks)

Q5/For the network of Figure below:



1. Determine the range of R_L and I_L that will result in V_{RL} being maintained at 5 V.
2. Determine the maximum wattage rating of the diode.

(20marks)

Good luck.....

Lecturers

Arwa Jaleel & Ahmed Qaiem



25/09/2016

Head of Department
Laith Wajeeh



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية / النجف



قسم هندسة تقنيات الاتصالات

المرحلة الأولى

أسئلة الامتحان النهائي للعام الدراسي

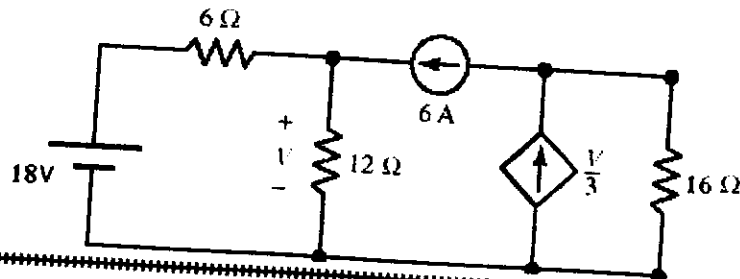
٢٠١٥-٢٠١٦

الدور الثاني

شعبة نظم الحاسب و الإحصاء

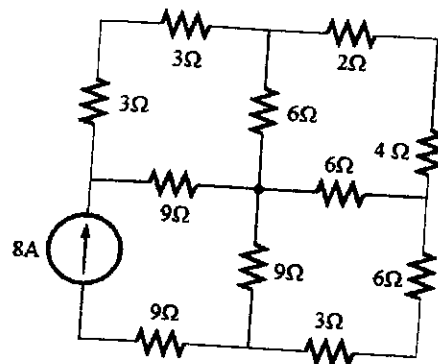
يسمح للطلبة باستخدام أي حاسبة علمية
Q1:- Determine the voltage across the 16Ω resistor with the application of Loop current method.

(20 Marks)



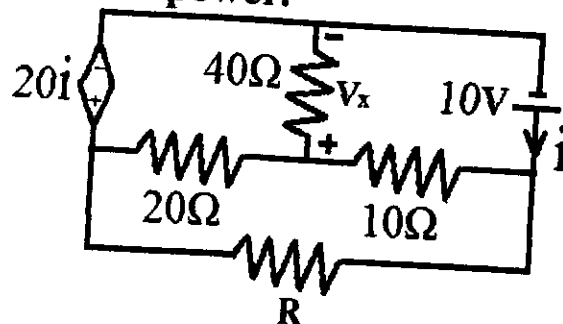
Q2:- Find the equivalent resistance and the power supplied by the current source.

(20 Marks)



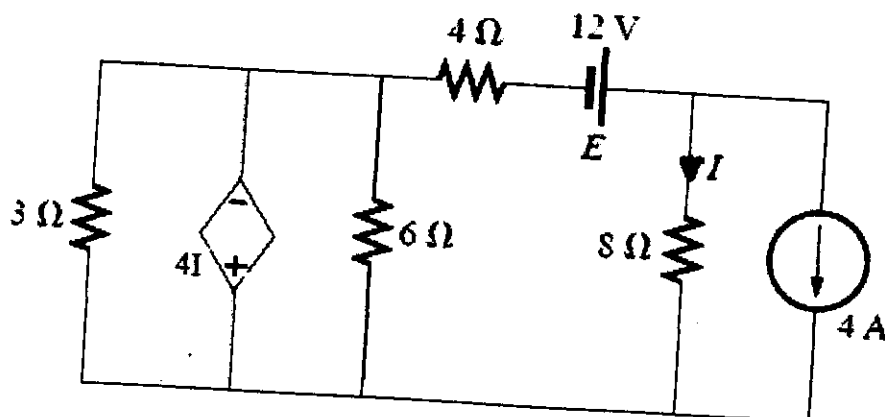
Q3:- Find the value of the resistor (R) that gives maximum power dissipation then determine the value of this power.

(20 Marks)



Q4:- Find the voltage across the 4Ω resistor by nodal analysis

(20 Marks)



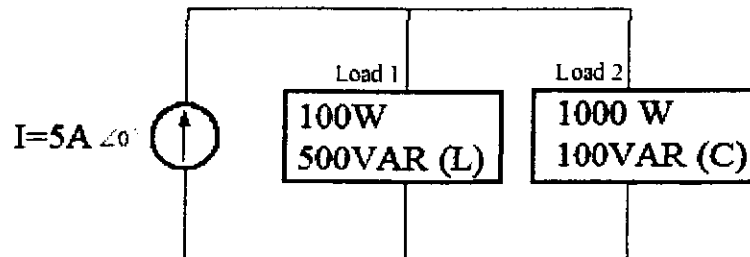
Q5:- Answer on branch:

A- For the system shown in the figure below, find:

1- Total power (**P**), total reactive power (**Q**), total apparent power (**S**), and total power factor (**PF**). Sketch the total power triangle.

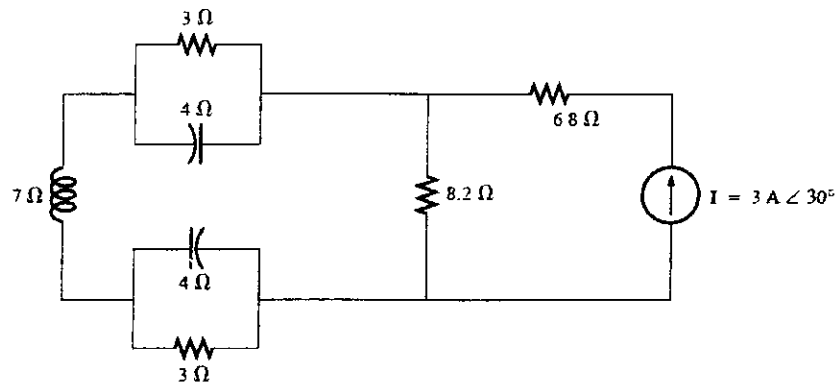
2- Find the total voltage.

(20 Marks)



B- For the network below, find the total impedance and Total voltage.

(20 Marks)



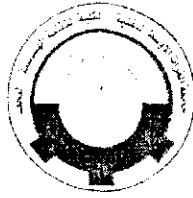
04/09/2016

رئيس القسم: ليث وجيه عبد الله

مدرس المادة: ناصر حسين سلمان



القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : حقوق الانسان
زمن الامتحان : ٣ ساعة
التاريخ : ٢٠١٦/٠٩/٥



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان النهائي- الدور الثاني- العام الدراسي ٢٠١٥/٢٠١٦

ملاحظة الاجابة على جميع الاسئلة

س١/ في احدى صور الديمقراطية يرجع الى الشعب بالقضايا المهمة وضحاها ، ثم عدد وشرح صورها الاخرى ، ثم وضح ماهية الديمقراطية .
(٢٠ درجة)

س٢/ اجب عن احد الفرعين ::
(٢٠ درجة)

أ- تكلم عن الحق بالحياة بوصفه احد الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ .
ب- اشرح مفهوم الحق بالاصطلاح ، ثم عدد عناصره .

س٣/ عدد الحقوق الشخصية الواردة في دستور العراق لسنة ٢٠٠٥ و اشرح اثنين فقط . (٢٠ درجة)
س٤/ اجب عن احد الفرعين ::
(٢٠ درجة)

أ- ضع كلمة صح امام العبارة الصحيحة وكلمة خطأ امام العبارة وصح الخطأ ان وجد لخمس فقط .

١- يراد بأهلية الوجوب صلاحية الشخص لاكتساب الحقوق والالتزام بالواجبات .

٢- ان حرية الصحافة من الحقوق الاجتماعية الواردة في دستور العراق لسنة ٢٠٠٥ .

٣- تبدأ شخصية الانسان بتمام ولادته حيا وتنتهي بوفاة .

٤- في المساواة امام القانون نص الدستور العراقي على معايير عدة متشابهة لا يغني احدهما عن الاخرى .

٥- من الشروط الواجب توافرها لعضوية مجلس النواب العراقي ان يكون حاصلا على شهادة الاعدائية او ما يعادلها .

٦- ان الاتجاه الغالب بالوقت الحاضر هو الاخذ بالقواعد الدستورية العرفية .

ب- عدد الشروط الواجب توافرها في المرشح لرئاسة الجمهورية العراقية .

س٥/ اجب عن ما يلي ::
(٢٠ درجة)

أ- أملاً الفراغات بما يناسبها من الكلمات لخمس فقط .

١- من المبادئ الواردة في قانون العقوبات العراقي لحماية حقوق الانسان هي..... ،

٢- ان مبدأ الفصل بين السلطات ينبغي ان يكون

٣- مجموع ما للشخص من حقوق وما عليه من التزامات مالية .

٤- من الحقوق الفكرية الواردة في دستور العراق لسنة ٢٠٠٥ هي..... ،

٥- يشترط في المرشح لعضوية مجلس النواب العراقي ان لا يكون عضواً عند الترشيح .

٦- تعني حكم الفرد الواحد .

ب- تتسم القواعد الدستورية المدونة بالوضوح والدقة والتحديد ، ناقش ذلك .

65/69/2016
رئيس القسم: ليث وجيه عبد الله

مدرس المادة : حيدر عبد الجليل



Note: Answer Only Four Questions. For each question 25 marks.

Q1: A- Define Four only from the following terms:

(12 marks)

1. Accuracy.
2. Response.
3. Stability
4. Environment
5. Reliability.

Q1: B- Usually there are two types of variables. List these two types and explain one of them in details.

(13 marks)

Q2: A- Convert the following data into a grouped data (progressively) then compute the truth bounders and the group center for them.

(13 marks)

((13, 50, 22, 15, 20, 10, 26, 40, 33, 28, 19, 21, 36, 48, 30))

Q2: B- Compare between two standard class degrees of the same student in one exam and explain at any exam he had the batter mark. First exam degree = 62 and the standard deviation for the same exam is 18.2. For the second exam, the degree = 88, and the standard deviation is 13.3.

(12 marks)

Q3: A- Discuss briefly the term : ((The multimeter as Voltmeter)). Give the most important equations you think you need, and draw a block diagram for the circuit you guess it is necessary.

(13 marks)

Q3: B- Write (T) for the true sentence and (F) for the false one. (correct the wrong one)

1. Two multimeters A and B have sensitivities of 10 kΩ per volt and 30 kΩ per volt. Then the multimeter A is more sensitive from B. (prove your answer).
2. An ammeter should have very high internal resistance.

(12 marks)

Q4: A- Prove that: $I = x^{\frac{3}{2}} m^{\frac{1}{2}} t^{-2} \epsilon_0^{\frac{1}{2}} A$.

(10 marks)

Q4: B- Compute the value of the potential difference generated by an electron moving along straight line of length (0.5 cm) through 2μsec. Assume the electron charge is $1.6 \times 10^{-19} c$ and the electron mass is $9.1 \times 10^{-31} kg$. Assume also the path is in vacuum.

(15 marks)

القسم : هندسة تقنيات الاتصالات

المرحلة : الأولى

المادة: قياسات كهربائية

زمن الامتحان: ثلاث ساعات

التاريخ: 2016/09/06



الامتحان النهائي – العام الدراسي ٢٠١٥ / ٢٠١٦

معلم العالي والبحث العلمي

التعليم التقني

جامعة الفرات الاوسط التقنية

الكلية الهندسية التقنية- نجف

Q5: A: Complete the following sentences with suitable words. (12 marks)

1. Output it was allowable values can
2. The average value of reading can be defined as the summation of reading
3. The precision can be given by:

Q5: B- Draw and sign the parts of the circuit for the following: (Select two only)

1. The full wave rectifier to measure a.c. voltage.
2. Multimeter as ammeter with three resistances.
3. Balanced bridge type VTVM.

(13 marks)

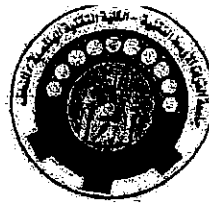
Good Luck 4 all of U

Teacher in charge

A. L. Hussam N. Al-Anssary

Head of dept.

A.L. Laith W. Abdullah



Notes/ 1. Answer all questions 2. All questions have equal marks

Q1/ How can you done the following jobs in Auto CAD program (write it by macro method):-

1. Draw a square inside circle (the side length is 10mm)
2. Copy the assemble in section (1) for a distance 40 mm to left side.
3. complete a half circle with 25 mm in radius.

Q2/ What is the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketch with dimensions for each one of the following.

1. L ; 100,100 ; @120,0 ; @120<120 ; @120<240
2. rect ; w ; 12 ; 100,100 ; 280,200 ;
3. c ; 115,50 ; d ; 46
4. a ; 150,110 ; 200,175 ; 250,108

Q3/ Choose the correct answer which achieve the sentence for the following : (20 marks)

1. Auto CAD program one of the programs that used to
a. theoretical Analysis b. design analysis and drawing c. implemented solution d. formatting
 2. To draw polygon in Auto CAD program at command line by write
a. pol b. poly c. ply d. p .
 3. In order to draw lines with vertical and horizontal direction only, go to..... in command toolbar.
a. Mirror b. Ortho c. Object snap d. Trim
 4. There are options to draw a polygon in Auto CAD.
a. Two b. Four c. Six d. Eight
 6. Instruct that clean all the lines and figures on the screen is
a. erase b. trim c. chamfer d. mirror
- Q4/ How many way to draw a polygon with 10 sides in AutoCAD? Explain it with sketching.
- Q5. Write the basic steps to draw the following drawing :-

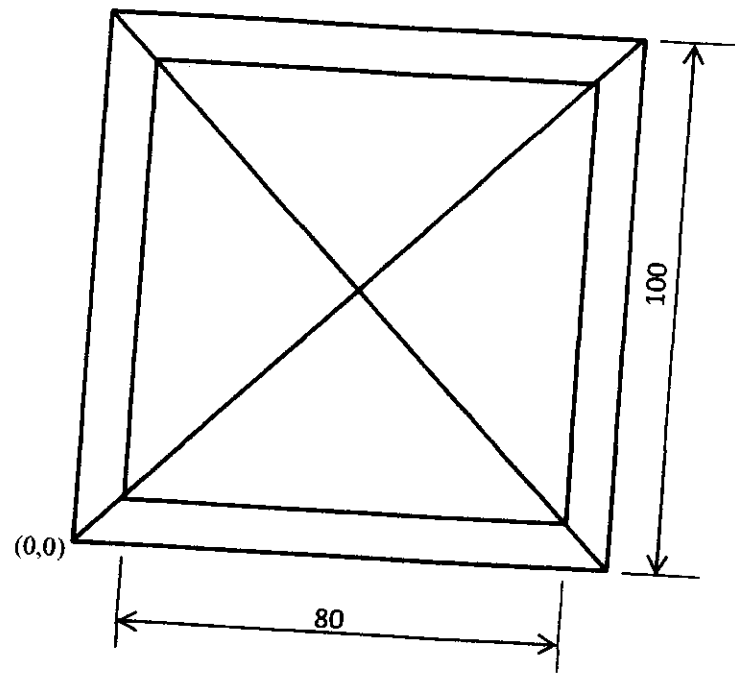
turer

Lecturer

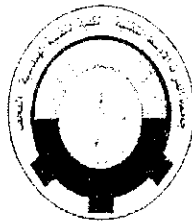
(1 - 2)

07/09/2016

Head of Department



(2 - 2)



The final exam for (2015-2016)

Group one: answer **four** only

Q1/ What are the system units of the computer? Explain it.(15 Marks)

Q2/ What are the main parts of computer? Explain it.(15 Marks)

Q3/Explain the type of computers based on size.(15 Marks)

Q4/What are the types of DOS files? Explain it.(15 Marks)

Q5/Answer the following:(for **three** only)

1. 45 byte= -----bits
2. 58000 k bit =-----M byte
3. 87 G bit =-----k byte
4. 99Mbyte=-----bit(15 Marks)

Group two: answer **all** questions

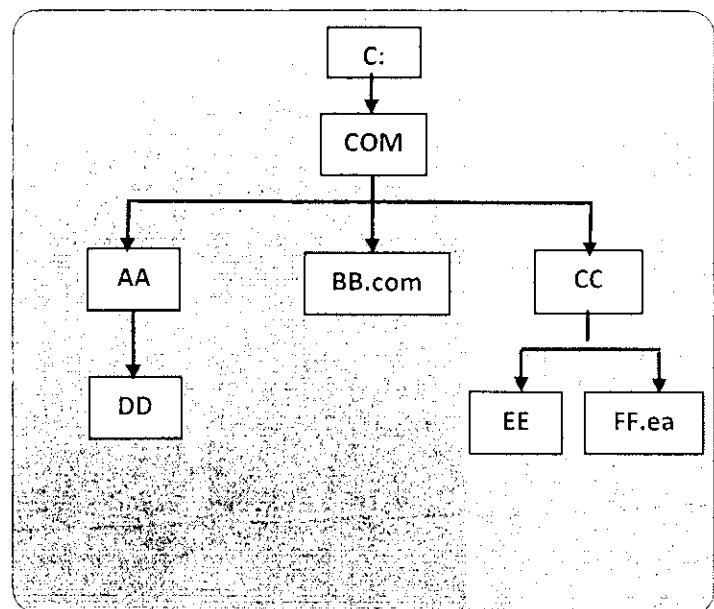
Q1/Give the task and path of the following items:

Calculator , Notepad , Appearance and personalization , Music (20 Marks)

Q2/Create the following tree by MS-DOS system:

1. Display all files that have extension (com).
2. Rename IIII and FF.ea.
3. Delete BB.com and CC.
4. Display the contents of AA in alphabetic form and as a page.
5. Create text file as ahmed.txt in (EE).

(20 Marks)



08/09/2016

Head of department

L.WAJEHI

Examiner

I. ALSHIMAYSAWI

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة : رياضيات
زمن الامتحان : ثلاث ساعات
التاريخ : ٢٠١٦/٩/١٩



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

الامتحان النهائي - العام الدراسي ٢٠١٥/٢٠١٦ / الدور الثاني

Note:- Answer any (**ten**) questions only (every question carry **10** Marks)

Q1:- Evaluate the following limits:-

1) $\lim_{x \rightarrow \infty} \frac{x \sin x}{(x + \sin x)^2}$

2) $\lim_{x \rightarrow 0} \left(\frac{1}{x} + 1 \right)^x$

Q2:- find $\frac{dy}{dx}$ of the following function(Use definition differentiation): $f(x) = \sqrt{3x}$

Q3:- find the following integrals (use integration by parts):

1) $\int x \cos x dx$

2) $\int x^3 \ln x$

Q4:- prove that:

a) $\frac{\cos 3x - \cos x}{\cos x + \cos 3x} = -\tan 2x \cdot \tan x$

b) $\tan^2(x) = \sin^2(x) \cdot \cos^{-2}(x)$

Q5:- Evaluate the following indefinite integrals:

1) $\int \sin ax \cos ax dx$

2) $\int \frac{dx}{x\sqrt{x^2+4}}$

3) $\int \tanh^{-1}(\ln \sqrt{x}) \cdot \frac{dx}{x(1-\ln^2 \sqrt{x})}$

Q6:- find the second derivatives for the following function: $f(x) = \sqrt{2x} + \frac{2\sqrt{2}}{\sqrt{x}}$ at $x = 2$

Q7:A:- find $\tan(A+B)$: If $\cos B = 12/13$ and $\sin A = 4/5$

Q7:B:- write the equation line at $x = 3$ of the curve: $y = \frac{1}{\sqrt{2x+3}}$

Q8:- if $A = \begin{bmatrix} -2 & 1 & 4 \\ 0 & 3 & 7 \\ 0 & 0 & 1 \end{bmatrix}$ find any values of α such that $\det(A - \alpha I) = 0$ (where I is identity matrix that's square matrix with ones in diagonal position and zeros else).

Q9:- find the domain and range for(**any two only**) functions:

a) $y = \frac{1}{\sqrt{3-x}}$

b) $y = \frac{1}{x^2+1}$

c) $\sqrt{x+4}$

Q10:A:- find derivative (**any one only**) for the following functions :

1) $y = \ln(\sec x + \tan x)$

2) $y = x + \tan(x, y)$

Q10:B:- If $u = 3x - 4$ and $y = u^7$ using the chain rule to find $\frac{dy}{dx}$

Q11:- solve the matrix to find X : $\begin{bmatrix} 8 & -3 \\ -5 & 2 \end{bmatrix} X = \begin{bmatrix} 4 & -1 \\ -3 & 1 \end{bmatrix}$

19/09/2016

-HOD:

Laith wajeed

Lecturer:

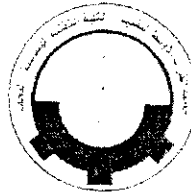
Hassanin M. Hamza

Lecturer:

Hawraa F. Abd

عيسى الرشيد
١/٤/٢٠١٦

القسم : هندسة تقنيات الاتصالات
المرحلة : الاولى
المادة: مبادئ رقمية
زمن الامتحان: ٣ ساعة
التاريخ: ٢٠١٦/٠٩/٢١



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
هيئة التعليم التقني
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية / نجف

امتحان النهائي- الدور الثاني- العام الدراسي ٢٠١٥/٢٠١٦

Q1 A : Convert the following number to bases decimal: **10M**

1) $(+310)_5$ 2) $(435)_8$ 3) $(198)_{12}$ 4) $(345)_6$

5) $(10110.0101)_2$ 6) $(16.5)_{16}$ 7) $(DADA.B)_{16}$

8) $(1010.1101)_2$

Q1/B// Convert the following binary numbers to hexadecimal and to decimal: **2.5M**

(a) 1.10010,

→ (b) 110.010.

Q1/c//: Convert decimal 27.315 to binary

2.5M

Q1/D//: Obtain the 1's and 2's complements of the following binary numbers: **5M**

(a) 00010000

(b) 00000000

(c) 11011010

(d) 10101010

Q2/Simplify the following Boolean expressions to a minimum number of literals: **5M**

1) $xy + x(wz + w\bar{z})$

2) $(A + \bar{A}B) ((\bar{A} + \bar{B} + C) (C) ((\bar{A} + \bar{B}))$

Q3// Expand the following functions as product of sum expressions:

$$f(A, B, C, D) = \prod(7; 12; 15)$$

$$f(A, B, C, D, E) = \prod(0; 16; 31)$$

5M

Q4/A//: Simplify the following Boolean functions, using K-maps: **10M**

1) $F(x, y, z) = \sum(1, 2, 3, 6, 7)$

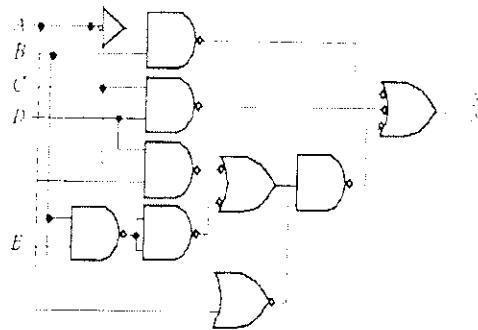
2) $\bar{x}\bar{y} + yz + \bar{x}y\bar{z}$

3) $A\bar{B}C + \bar{B}\bar{C}\bar{D} + BCD + A\bar{C}\bar{D} + \bar{A}\bar{B}C + \bar{A}B\bar{C}D$

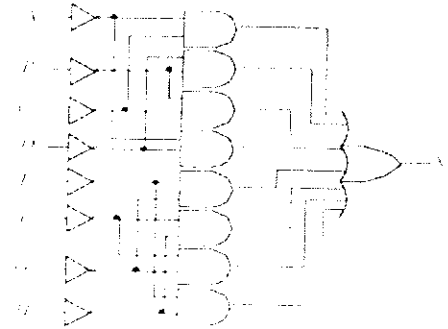
4) $F(w, x, y, z) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

Q4B// reduce and minimum terms

(25M)



(B)



(a)

Q5/A/ Apply DeMorgan's theorems to the following and draw the circuit:

(15M)

$$f = \overline{\overline{(A + B)} \overline{(C + D)} \overline{(E + F)} \overline{(G + H)}}$$

Q5/B// Draw block diagram shows the sum outputs when 1111 and 1101 are added by the 4-bit parallel adder

(5M)

Q5/C// Draw a block diagram for 4-bit parallel subtractor by using four units A= 1101 and B=1011

(5M)

Q6// Using Karnaugh maps simplify the following logic functions and draw logic circuit for two cases:

(10M).

- 1.If the (don't care condition) taken in consideration.
2. If the (don't care condition) not taken in consideration.

$$F = \sum (1, 5, 8, 10, 12) \text{ and don't care condition}$$

$$D = \sum (7, 9, 11, 13).$$

21/09/2016
 ربيع الثامن
 الساعة ١٢



الامتحان النهائي للعام الدراسي 2015 – 2016 / المورائي

Q1. Fill in the blanks with appropriate for five of the following : (25 marks)

1. Auto CAD program one of the programs that help in
2. To change the drawing background go to in command toolbar
3. CAD refers to
4. Printing any drawing object by command
5. To draw rectangle in Auto CAD program at command line by write
6. Limit command use to

Q2. Explain with graph the steps of inserting the electrical symbols in Auto CAD workspace (give example) .

(25 marks)

Q3. What are the objects that appear in Auto CAD screen if you write the following steps that written in (macro method), give sketh with dimentions for each one of the following.

(25 marks)

1. rec : c : 2 : 2 : 0,0 : @ 20,20 ;
2. el : c : 50,50 : @ 50,0 : 50 ;
3. L: 0,0 : @10,0 : @5<45 ; @5<-45 ; @5<45 ; @ 5<315 ; @10<0 ;
4. c : 100,100 ; d : 20 ; c : 100,100 : 5 ;
5. el : 0,0 : @100,0 : 50 ;

Q4. How can you done the following jobs in Auto CAD program (writ in by macro method):-

(25 marks)

1. Draw a polygon with 8 sides (the side length is 10mm)
2. Moving the polygon in section (1) for a distance 20 mm to right side.
3. Draw upper half a circle with 25 mm in radius by using arc command.
4. Draw upper half a circle with 25 mm in radius by using circle command.
5. Draw a squar with side length of (100 mm) by using rectangle command.

GOOD LUCK

مدرس المادة
د. احمد حمودي علي

مدرس المادة
م. م. بلاسم عبد الأمير القريشي

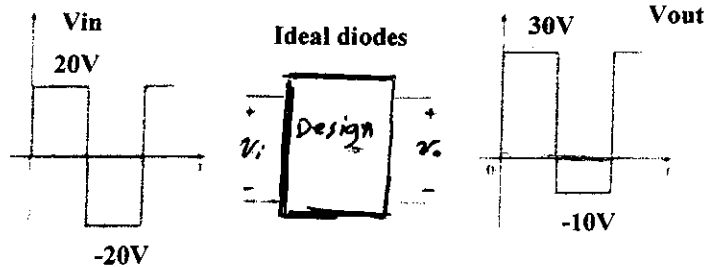
22/09/2016

رئيس القسم
م. م. ليث وجيه



Answer all questions

Q1/A-Design a circuit to perform the following function:

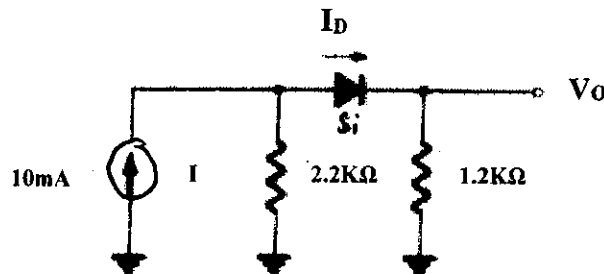


(12marks)

B- Explain the difference between the characteristics of natural diode and Zener diode?

(8marks)

Q2/A-Determine V_O and I_D for the network:



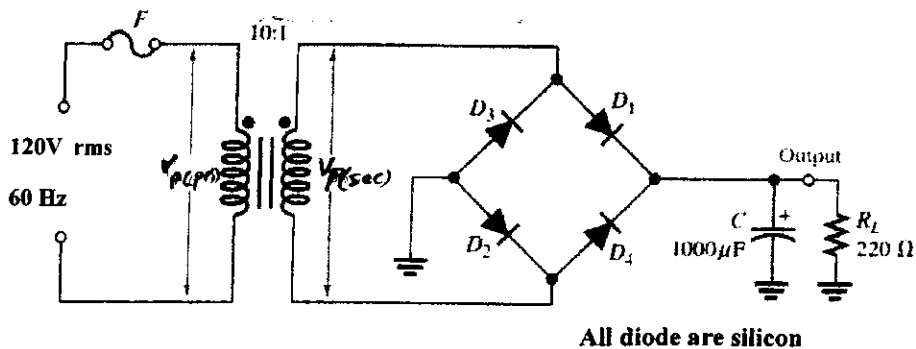
(11marks)

B- Define the followings:

1. Energy level
2. PN junction
3. Voltage multiplier circuits

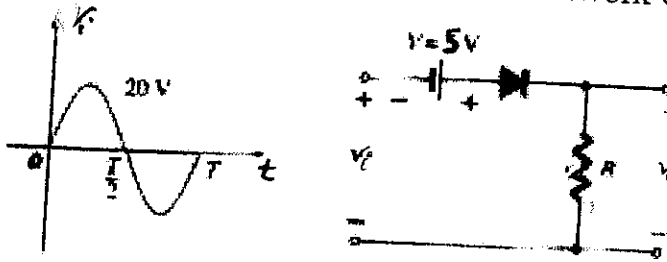
(9marks)

Q3/ Determine the ripple factor for the filtered bridge rectifier with a load as indicated in below figure



(20marks)

Q4/ A- Determine the output waveform for the network of figure below:

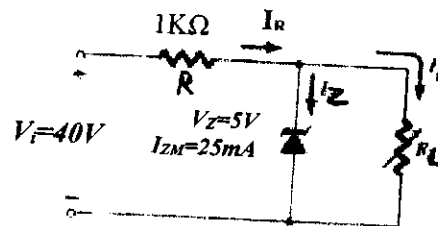


B/Explain the energy Diagram of PN Junction and Depletion region.

(10marks)

(10marks)

Q5/For the network of Figure below:



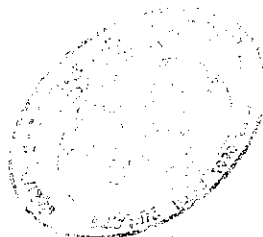
1. Determine the range of R_L and I_L that will result in V_{RL} being maintained at 5 V.
2. Determine the maximum wattage rating of the diode.

(20marks)

Good luck.....

Lecturers

Arwa Jaleel & Ahmed Qaiem



25/09/2016

Head of Department
Laith Wajeeh