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

قسم هندسة تقنيات السيارات

المرحلة الأولى

أسئلة الفصل الأول للعام الدراسي

٢٠١٦-٢٠١٧

شعبة ضمان الجودة و الأداء الجامعي

قسم السيارات
س / ١

Ministry of Higher Education and Scientific Research
Al-Furat Al-Awsat Technical University
Eng. Tech. College – Najaf/Automobile Tech. Eng. Dept.
1st Course Examination. January- 2017

Subject: Thermodynamics
Time: 2 hours

Class: 1st year.
Date: / /2017.

*Note// Answer **four** questions, each question carries 25 marks*

Q1):

A- Define the thermodynamics and classify the thermodynamics system? **(13 marks)**

B- What are the ordinary and absolute temperature scales in the SI and the English system? **(12 marks)**

****

Q2): An Engineering Technical College/ Najaf (ETCN) is paying ***$0.12/kWh*** for electric power. To reduce its power bill, the ETCN installs a wind turbine with a rated power of ***30 kW***. If the turbine operates ***2200 hours per year*** at the rated power, determine the amount of electric power generated by the wind turbine and the money saved by the school per year? **(25 marks)**

****

Q3) Complete this table for water: **(25 marks)**

T [°C]	*P* [kPa]	*h* [kJ/kg]	*x*	Phase description
	200		0.7	
140		1800		
	950		0.0	
	800	3162.2		
80	500			

****

Q4) A piston– cylinder device initially contains ***0.35kg*** steam at ***3.5 MPa***, superheated by ***7.48°C***. Now the steam loses heat to the surroundings and the piston moves down, hitting a set of stops at which point the cylinder contains saturated liquid water. The cooling continues until the cylinder contains water at ***2008°C***. Determine: **A)** The final pressure and the quality (if mixture). **B)** The boundary work. **(25 marks)**

****

Q5)

A- Determine the mass of air in a room whose dimensions are ***4m×5m×7m*** at ***100kPa*** and ***25°C***? R=0.287kJ/kg.K **(13 marks)**

B- ***1kg*** of air at ***500°C*** is expanded isothermally from a pressure of ***2MPa*** to a pressure of ***0.5MPa***, find the work done by the air. **(12 marks)**

****

Dr. Qahtan A. Abed
Examiner

Dr. Hyder H. Balla
Head of Department

قسم السيارات
س/ 1

جامعة الفرات الوسط التقنية
الكلية التقنية الهندسية النجف

امتحانات الفصل الاول 2016-2017

س1/المناظرات حقوق الانسان اهمية خاصه في فهم مادة حقوق الانسان عدد هذة المناظرات ثم شرح واحدة منها وباسهاب .

س2 / في عام 2002 الامم المتحدة والمجتمع الدولي يختار شخصية الامام علي (ع) مثلا اعلى في شجاعة الحق ونصرة حقوق الانسان.

س3/ اجب عن احد الفرعين :

أ- تحدث عن الاعلان العالمي لحقوق الانسان من خلال الديباجة ثم اذكر اربعة من مواد الاعلان .

ب- للحريات العامة انواع عددها ثم اشرح الحريات الخاصة بالتعليم .

س4 / عرف حقوق الانسان تعريفا شلاملا ثم بين اهم الخصائص والاجيال

س5/ اجب عن احد الفرعين

أ- تحدث عن نشاة الصليب الاحمر الدولي ثم بين اهم اعمالة ومصادر تمويلة.

ب- الاتفاقية الامريكية لحقوق الانسان خصوصية في اشاعة حريات الرأي والتعبير والصحافة ناقش ذلك

قسم السيارات

وزارة التعليم العالي والبحث العلمي
جامعة الفرات الأوسط التقنية
الكلية التقنية الهندسية/النجف
قسم السيارات

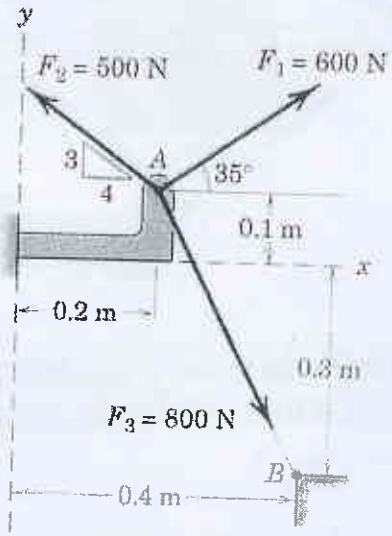
العام الدراسي ٢٠١٦-٢٠١٧
امتحان الفصل الاول

القسم: السيارات.
المادة: ميكانيك هندسي.
الزمن: ساعتان.
الممتحن: وسام احمد عبد الواحد.

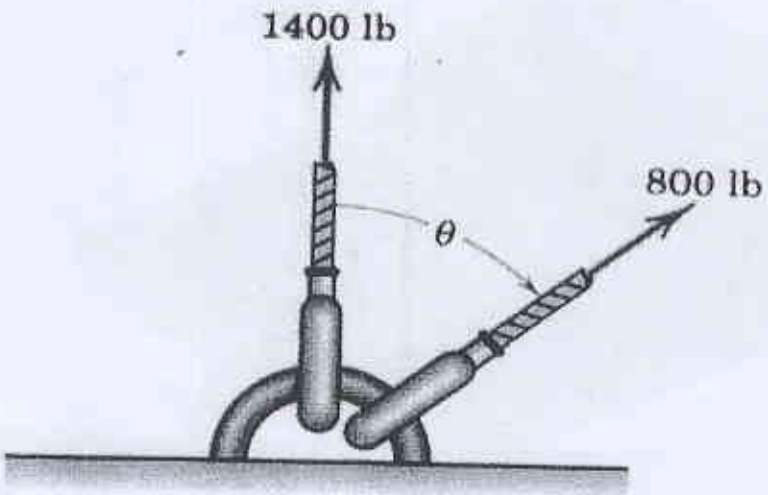
Answer three questions including Q4.

All questions have equal marks.

Q1: Find the components of the following forces shown in figure.

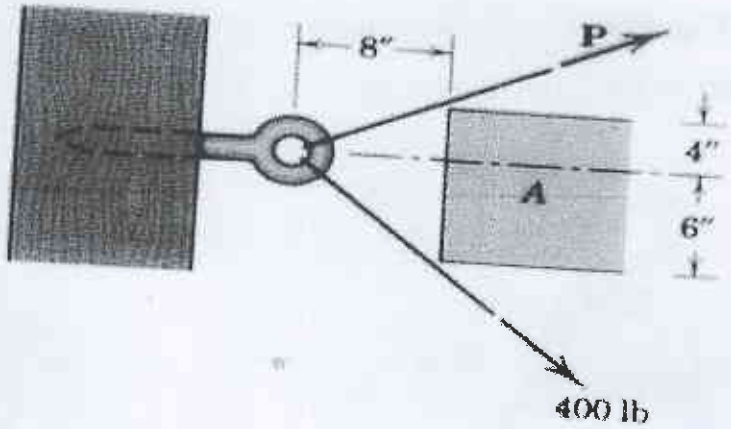


Q2: At what angle must the force 800-Ib be applied in order that the resultant R of the two forces has a magnitude of 2000 Ib?

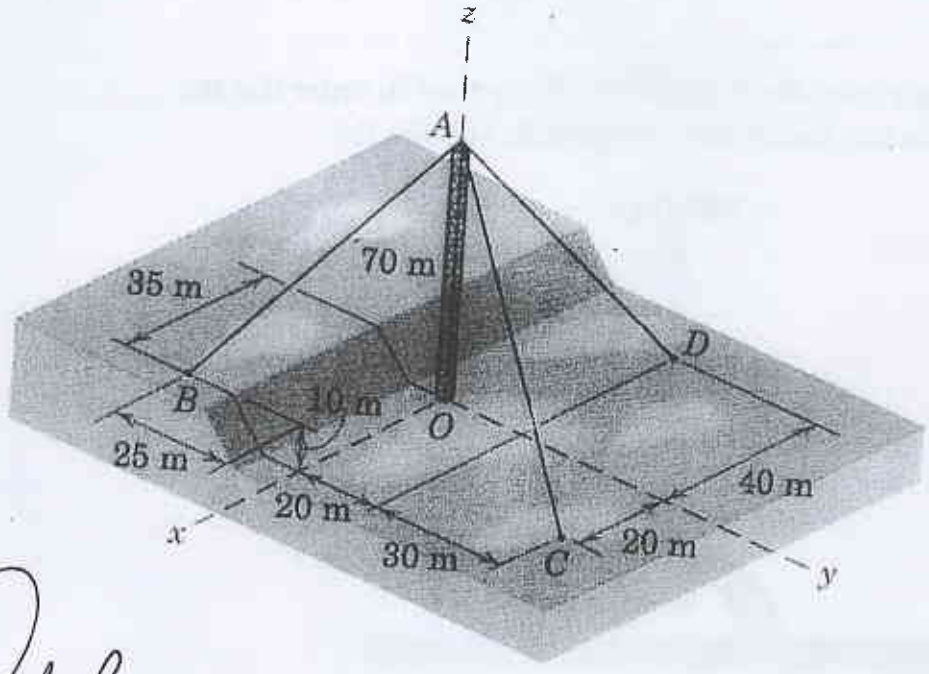


Q3:

It is desired to remove the spike from the timber by applying force along its horizontal axis. An obstruction A prevents direct access, so that two forces, one 400 lb and the other **P**, are applied by cables as shown. Compute the magnitude of **P** necessary to ensure a resultant **T** directed along the spike. Also find T.



Q4: A 70 m microwave transmission tower is steadied by three cables. Cable AB carries a tension of 1.2 KN. Express the components of that force in the main axes.



مدرست المادة

قسم السيارات
س ر ا

وزارة التعليم العالي والبحث العلمي
جامعة الفرات الاوسط التقنية
الكلية التقنية الهندسة النجف

المادة: تطبيقات حاسبة 1
المرحلة :الاولى
مدرس المادة :م.م. بسام عبد الصاحب

Answer all question

Q1\A What is the desktop components? list and explain. *15M*

Q1\B Explain a five options in shut down button *15M*

Q2\ A What is the keyboards shortcuts for this commands in windows? *10 M*

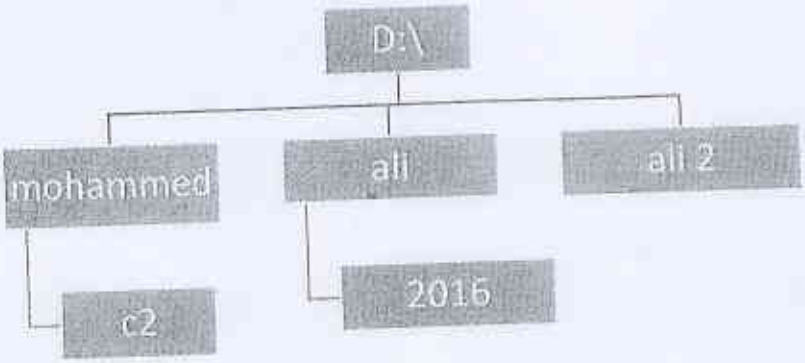
1- Close
2- Copy
3- Undo
4- Help
5- Quit
6- Restart
7- Open start menu
8- Select all
9- Move to Recycling
10- Find

Q2\ B List the options view and sort by in right click on windows desktop ?*15M*

Q2\C What is the Run in Start Menu? *5M*

Q3\A make tree below in MS Dos and do the following commands *20M*

1- Rename c2 to c5
2- Create text file in 2016
3- Delete 2016



Q3\B List five command for External Commands MS Dos *10M*

Q3\C Compere between this MS Dos Commands **(Dir/p, Dir/w, Dir/ad and Dir/a)** *10M*

مدرس المادة

قسم السيارات
م/ا

ATU University
Technical College Engineering - Annajaf

Dep. : Automobile Eng. Techniques.
Grade Level: 1st.
Object: Engineering Drawing
Exam Time: 2 hours.

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Q1: Use Geometrical Constructions to draw Figure (1) **40 marks**

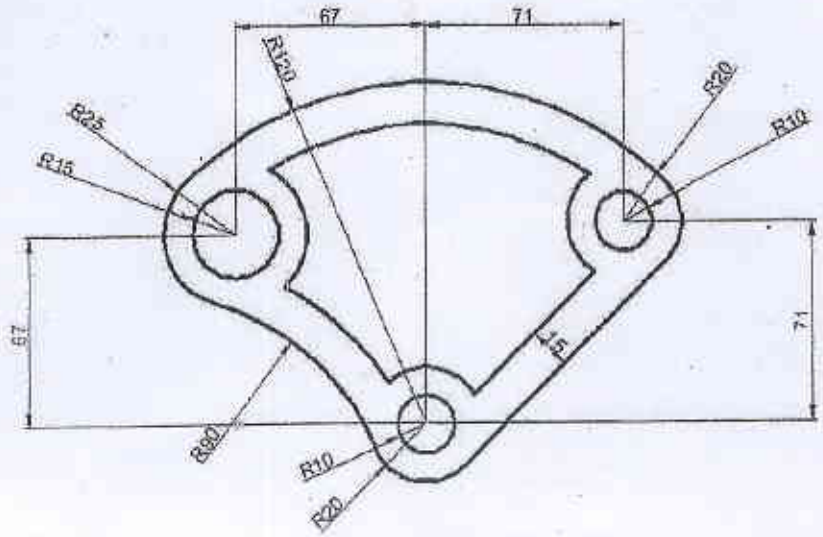


Figure (1)

Q2: From Figure (2), Draw: Front view, Top view & Side view **60 marks**

(Put the main dimensions)

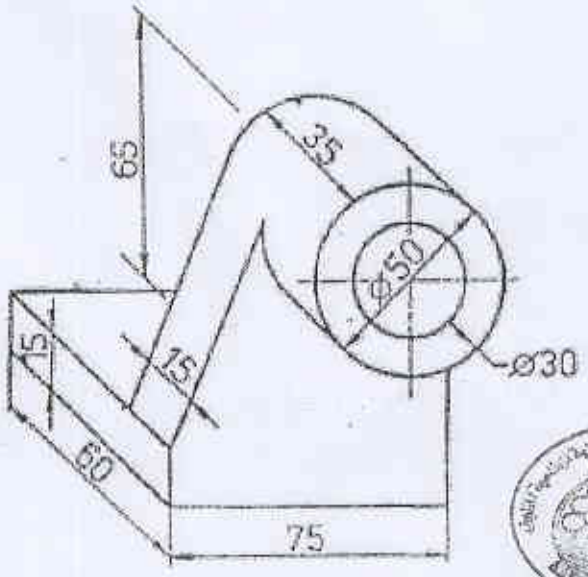


Figure (2)

Examiner

Ass. Lect . Fatima M. Kadhim

Head of Automobile Dep.

Dr. Haider H. AL- Abdili

ıgher Education and
ıntific Research
ıt Al-Awsat Technical
University
echnical Engineering College
pt. of Automotive Technique
Engineering

قسم السيارات

Subject: Electrical Circuit
Stage: 1St
Date:
Instructor: Furkan kamil

First Course Examination 2016-2017

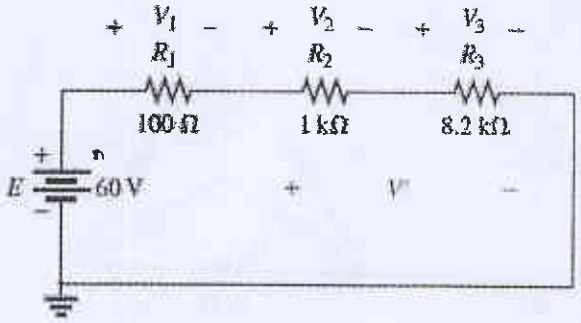
Q1/A/For the below Fig, with standard resistor values:

a. By inspection, which resistor will receive the largest? Share of the applied voltage? Why?

b. The total current for the circuit.

c. Find the voltage across the largest resistor using the voltage divider rule.

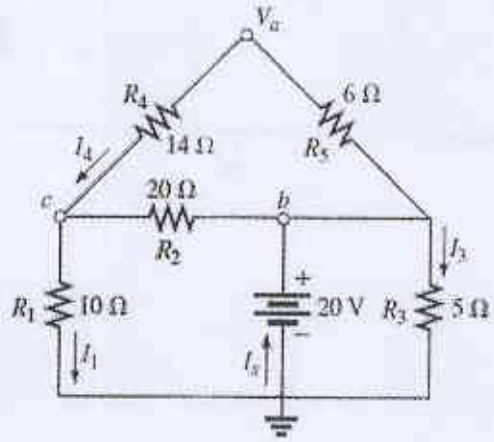
d. Find the voltage across the series combination of resistors *R*2 and *R*3.



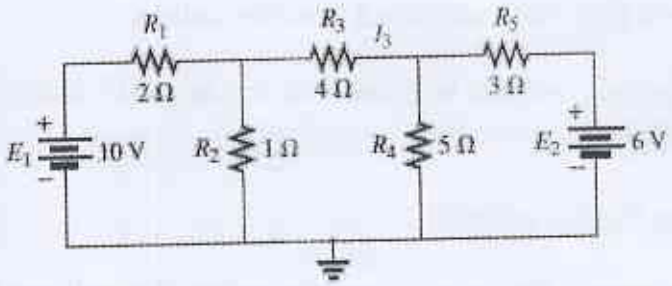
B/For the network in Fig below

a. Determine the currents I_s, I_1, I_3, and I_4.

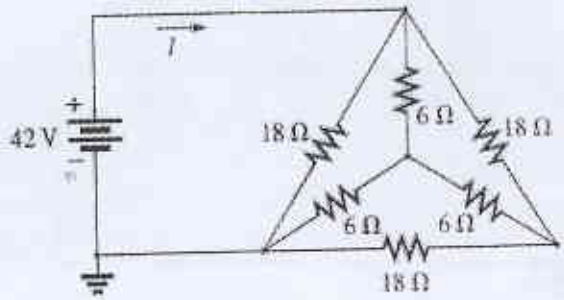
b. Calculate V_a and V_{bc}.



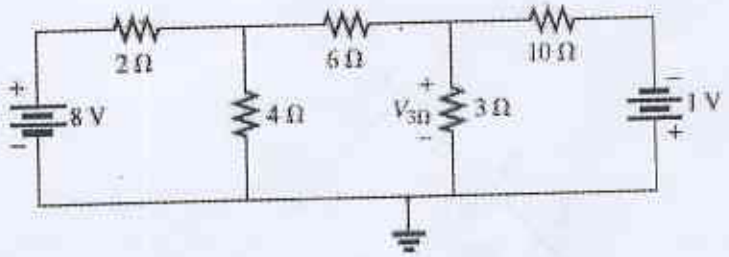
Q2/ Find the current I_3 for the network in Fig below using mesh analysis.



Q3/Using Y-Δ conversion, find the current I in each of the networks in Fig below.



Q4/ Find the voltage across the 3Ω resistor in Fig below by nodal analysis.



قسم السيارات

سؤال ١

chnical College of Najaf — *Subject: Automotive Materials*

Automotive Department — *Class: 1nd Stage*

Examiner: Oras khudayer — *First Attempt (2016-2017)* — *Time : hrs.*

.....

Q1/ (A) Give **three** important properties for any **three** elements of the following:

(a) Aluminuim (Al) . (b) Nickel (Ni). (12 D)

(c) Silver (Ag). (d) Lead (Pb). (13 D)

(B) Differ between low and high carbon steel?

.....

Q2/ (A) What is the method that used to join the metals? Give **five** reasons only for your choosing? (7 D)

(B) What are the procedures for the materials selection for any application? (13D)

.....

Q3/(A) Describe **(five)** limitations of the using of ceramic material? (12 D)

(B) What are the types of iron ores? Compare between them? (10 D)

.....

Q4/ (A) What considerations must be taken into account when choosing a tool material? How do carbon tool steels satisfy these requirements? **Give five only** (13 D)

(B) Before the selection of final cylinder block material ,What is the method that must be considered ? Why? (20 D)

.....

قسم السيارات

Ministry of Higher Education and Scientific Research
Al-Furat Al-Awsat Technical University
Tech. Eng. College – Najaf/Automobile Tech. Eng. Dept.
First semester examination 2016-2017

Subject: Mathematics
Time: 2 hours

Class: 1st year
Date: / / 2017

Notes// 1. Please read the questions carefully, 2. Answer all question

Q1:b) Determine the value of x from the following equation: **(15 Degree)**

$$\text{Sinh } x = \text{Cosh } x - \frac{1}{2}$$

Q1: b) Evaluate the following: $csc\,(\sin^{-1}\frac{1}{2})$ **(10 Degree)**

Q2: a) Three of the following four points lie on a circle center the origin . Which are they , and what is the radius of the circle? A(-1,7) , B(5,-5) , C(-7,5) and D(7,-1) **(13 Degree)**

Q2: b) Find the domain and range of each function : **(12 Degree)**

$$y=\frac{1}{1+\sqrt{x}} \qquad y=\frac{1}{\sqrt{3-x}}$$

Q3: a) Evaluate the following limits : **(14 Degree)**

1. $\lim_{x\to\infty} = \frac{x.\sin x}{(x+\sin x)^2}$ 2. $\lim_{x\to 1} = \frac{\sqrt{x+1}-\sqrt{2x}}{x^2-x}$

Q3: b) Prove the following identity : **(11 Degree)**

$$\frac{\text{Cos}(A-B)-\text{Cos}(A+B)}{\text{Sin}(A+B)-\text{Sin}(A-B)} = \text{tanB}$$

Q4: a) Find $\frac{dy}{dx}$ for the following functions: **(14 Degree)**

1. $y=\left(\sqrt{x^3}-\frac{1}{\sqrt{x^3}}\right)^2$ 2. y=ln (lnx)

Q4: b) Find the derivative of y with respect to x in the following functions: **(11 Degree)**

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

Dr. Eng. Mahdi Hatf Kadhum
The Examiner

Dr. Hyder H.