Mansoura University
Faculty of Science
Geology Department

جامعة المنصوره
كلية العلوم
قسم الجيولوجيا

Environmental and Archeogeophyics Exam (٤ level Geophysics)

جيولوجيا بيئيه وجيوفيزياء ألأثار جف ٤٠٨ (المستوى الرابع برنامج الجيوفيزياء) ١٩ / 2015/5

(Total mark 60)

Part I

Answer the Following Questions

1-Mention the differences between: **(15 marks)**

a) Gradiometers and normal magnetic survey in archaeology
b) EM and DC electric survey in archaeology
c) Twin array and wenner array

2-Write short notes on: **(15 marks)**

a) Magnetic age dating in archaeology
b) Survey pattern for archaeological prospecting
c) Limitations of electric and magnetic surveys in archaeology
d) Resistance meter survey in archaeology
e) Gradiometer survey in archaeology

Part II

Answer the following questions:

1- Define the term ***"bedrock"*** from environmental point of view and discuss briefly the best geophysical **methods** used in locating it. (10 Marks)

2- Discuss briefly suitable geophysical **techniques** used in groundwater investigation in calcareous reservoir. (10 Marks)

3- **Write on each of the following:** (10 Marks, 2.5 Marks for each)

a) Ultimate veering capacity
b) Soil corrosivity
c) Settlement
d) Landfill site characterization

Best Wishes

Prof. Dr. Hosni Ghazala Prof. Dr. Hamdy Seisa* Prof. Ibrahim Korat Dr. Mohamed Awad*

الفرقة: الرابعة الشعبة: جيوفيزياء المادة: برمجة خطية(ر٤٠٢)	كلية العلوم- قسم الرياضيات	دور مايو ٢٠١٥ الزمن: ساعتان التاريخ:19/5/2015

Answer all questions:

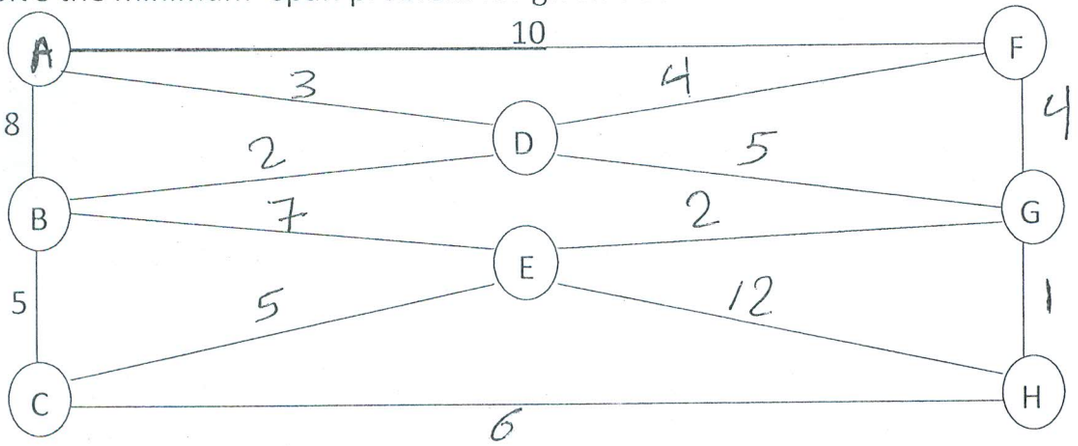
Question[1]

a- Define:

(i) The line segment in R^n (ii) Convex function (iii) Euclidean space

(iv) The objective function (v) Feasible region (vi) Slack variables

b- Solve the minimum- span problem for given network:



c- Show that S=$\{(x_1,x_2)|\ 2x_1+3x_2=7\}\subset R^2$ is a convex set?

(الدرجة ٢٠)

Question[2]

a- If we solve the LPP by using two phase method, in any cases we can go to phase II from phase I ?

b- By using the simplex method solve the LPP:

Min Z=$-3x_1+3x_2+5x_3$ Such that. $2x_1-2x_2+3x_3\le 1$, $x_1-x_2-2x_3\le 1$, $x_1, x_2, x_3\ge 0$

c- Show that: $f(x)=3x+4\ \ \forall\ x\in X\subset R$ is a convex function?

(الدرجة ٣٠)

Question[3]

a- Solve the following transportation problem using the least coast method:

	D1	D2	D3	D4	Availability
O1	6	4	1	5	14
O2	8	9	2	7	16
O3	4	3	6	2	5
Requirement	6	10	15	4	

b- Stat and prove the Mini-max theorem?

c- If $f(x)=\{10,5,3,2,1\}$, verify the Mini-max theorem?

(الدرجة ٣٠)

مع تمنياتى بالنجاح والتفوق د.محمد عبد الرحمن

Mansoura University
Faulty of Science
Department of Geology

Date: 23/5/2015
Final semester – Academic year 2014/2015
4th Program Geology and Geophysics
Full Marks: 60 marks
Time allowed: 2 hrs

Final Exam in Petroleum Geology of Egypt (G410)

Answer the Following Questions

Q1. Mention short notes on the most characteristic events that have been taken place in the following times: **(20 Marks)**

a. Lower Cretaceous in the Western Desert **(5 Marks)**
b. Oligocene in the Gulf of Suez **(5 Marks)**
c. Upper Cretaceous in Egypt **(5 Marks)**
d. The beginning of the Aquitanian-Burdigalian time in the Gulf of Suez **(5 Marks)**

Q2. Compare between each of the following: **(20 Marks)**

a. Miocene succession in **both** the Gulf of Suez and the Nile Delta **(5 marks)**
b. Paleozoic structural evolution in **both** the Gulf of Suez and the Western Desert **(5 Marks)**
c. The main tectonic features in Upper Cretaceous in **both** the Gulf of Suez and the Western Desert **(5 Marks)**
d. Crude oil of **both** Belayim and Kareem formations **(5 Marks)**

Q3. Write on the petroleum Geology of the Western Desert; describing both Paleozoic basins and Upper Cretaceous basins **(20 Marks)**

All the best

Dr. Ghaleb Essa

لجنة الامتحان والتصحيح:

د. غالب عيسى* د. وليد شكرى الديسطى

MANSOURA UNIVERSITY
Faculty of Science
Geology Department
Mansoura – EGYPT

Tuesday, May 26, 2015
2nd semester, Academic year 2014 – 2015
Full mark: 60
Exam time allowed: 02 Hrs (09.00–11.00 AM)

FINAL EXAM IN HYDROGEOLOGY AND GEOMORPHOLOGY OF EGYPT (G402) FOR THE FOURTH LEVEL GEOPHYSICS

Answer THREE questions only

Question 1. Define and explain (20 marks)

A. Water Table (Level), (5 marks)

B. Salinity content, (5 marks)

C. Plateau, (5 marks)

D. Plains, (5 marks)

Question 2. Compare between (20 marks)

A. Capillary and soil horizons, (5 marks)

B. Confined and unconfined aquifers, (5 marks)

C. Young and old stage rivers, (5 marks)

D. Factors controlling thickness of soil profiles, (5 marks)

Question 3. Write briefly on:

A. Types of groundwater reservoirs (10 marks)

B. Factors controlling type and rate of weathering (10 marks)

Question 4. Discuss the following subjects (20 marks)

A. Sea water invasion, (10 marks)

B. Perched water, (10 marks)

All the best wishes

Mansoura University **Faculty of Science** **Physics Department** **Subject: Physics**		**Second Term** **4th level Program : Geo-Physics** **Date : 30 May 2015** **Time allowed : 2 hours**
Course : Physics 434 (General Meteorology)		**Full Mark: 60 Mark**

Answer All the following questions

[1] Explain or interpret the following: [20] Marks

a- Mechanisms Influencing Atmospheric Behavior (write two factors at least ?)
b- Equation of state of ideal gas and gas constant
c- Geostrophic and thermal wind
d- Mixing ratio and specific humidity

[2] [20] Marks

a- Drive mathematical expression for hydrostatic balance. ?
b- Calculate the density of water vapor which exerts a pressure of 9 mb at 20°C [R_V=461 J deg^{-1} kg^{-1}].
c- Explain the following items:
i- The cases of stability and instability of atmosphere .
ii- Troposphere, Stratosphere and Mesosphere.

[3] [20] Marks

a- Differentiate between the following items
i- Weather and climate?
ii- Synoptic regional and micro meteorology?
iii-Dry and moist adiabatic lapse rate ?
b- Use Wien's displacement law to compute the "color temperature" of the sun, for which the wavelength of maximum solar emission is observed to be ~0.475 μm. [$\alpha = 2897.8\ \mu m\ K$]

Examiners : 1- Dr. Reda Hasan Ali **2- Prof. Magdy Tadros Yacoub**

Mansoura University	Second Term Exam May/June 2015
Faculty of Science	Geophysics Program – Fourth Level
Physics Department	Physics of Materials Code No.433

Total Mark [60 Mark] Each Question [20 Mark]

Answer the following Questions: Time Allowed TWO Hours:

Q. 1: Explain the distinction between:

(a) Dielectric materials and Conductor materials, [5Mark]

(b) Phonons and Electrons, [5Mark]

(c) Silicon and Silicone, [5Mark] and

(d) Rubber and Copper in terms of stress – strain diagram. [5Mark]

Q. 2: (a) Interpret factors affecting selection of materials. [10Mark]

(b) Discuss in brief phase transformation in materials. [10Mark)

Q.3: Explain what is meant by:

(a) Ideal insulator materials, [5Mark]

(b) Polymorphisms in materials, [5Mark]

(c) Glass is very stiff at room temperature, [5Mark] and

(d)Graphene is highly remarkable materials. [5Mark]

Prof.Dr. Mustafa Kamal

انتهت الأسئلة