طرق التنقيب المغناطيسية جف ٣٠٨

Mansoura University
Faculty of Science
Geology Department

جامعة المنصوره
كلية العلوم
قسم الجيولوجيا

Magnetic Prospecting Final Exam (3rd level Geophysics) 2014/2013

طرق التنقيب المغناطيسيه جف ٣٠٨ (المستوى الثالث برنامج الجيوفيزياء) ٢٠١٣/١٢/٢٣

Answer the Following Questions (Total mark 60)

1- Complete the following: (20 mark)

a- The RTP is commonly applied for the magnetic measurements at ----------latitude areas. however, upward continuation enhance techniques enhance ----------anomalies.

b- Residual magnetic anomalies are called ----------frequency and Regional magnetic anomalies are called ---------- frequency magnetic anomaly

c- Remnant magnetization depending upon ---------- and of the ----------earth's magnetic field.

d- Secular variations are related to ----------origin while diurnal variations are related to ----------origin.

e- Gradiometers survey enhances ----------anomaly sources and overcome ----------problems.

f- Proton magnetometer measures only ----------of the earth's magnetic field while fluxgate magnetometer measures ----------and ---------- components.

g- Declination D is angle between ---------- and equals to ----------

h- Inclination I of the earth's magnetic field ---------- towards the equator and equals to ---------.

i- K of sedimentary rocks is ----------than igneous rocks due to ----------in composition.

2- Mention the reasons for the following: (20 mark)

a- At intermediate latitudes magnetic anomalies have positive and negative closures

b- Terrain clearance survey is preferred for mineral prospection while barometric surveys are for oil and gas exploration.

c- Proton magnetometer is widely used than other magnetometers.

d- Ferromagnetic minerals having high K while diamagnetic minerals having negative K.

e- Gradiometer surveys are preferred for mineral and archaeological prospection.

3- Write briefly on the following: (20 mark)

a. Interpretation of the magnetic measurements.

b. Advantageous and disadvantageous of the magnetic method.

c. Factors affecting shape and amplitude the magnetic anomalies.

d. Hysteresis loop and its importance.

Best Wishes

Prof. Hosni Ghazala dr. Ghaleb Issa Dr. Hesham Salam*

المستوى الثالث - جيوفيزيا - ج ٣١٥ - مادة الجيولوجيا الاقتصادية ج ٣١٥

Mansoura University
Faculty of Science
Geology Department
Time : 2 hours
Full Mark: 60 degree

First Term Exam (January 2014)
Third Level (Geophysic Program)
Subject: G-315 (Economic Geology)
Date: 26-12-2013

Answer the Following Questions:-

Question One : Differentiate between the followings (answer Five only) **(20 Degree)**

1- Magmatic iron ores and sedimentary irons.
2- Cavity filling deposits and metasomatic replacement deposits.
3- Original rock openings and secondary rock openings.
4- Role of volatile action and causes of magmatic differentiation.
5- Factors controlling contact metamorphism and metasomatic deposits.
6- Cretaceous and Miocene deposits in Egypt.
7- Factors controlling deposition of carbonates in sea water.

Question Two : Give examples of ore mineral deposits. **(20 Degree)**

1- Hypothermal, mesothermal and epithermal deposits.
2- Carbonate mineral deposits.
3- Products of weathering processes.
4- Early magmatic mineral deposits.
5- Economic non-metallic mineral deposits.
6- Phosphatic mineral deposits.
7- Coal mineral deposits.
8- Replacement metasomatic mineral deposits.
9- Gaseous and vapour mineral deposits.
10-Magmatic deposits in Egypt.

Question Three : Give a suitable term for these sentences. **(20 Degree)**

1- Less soluble minerals separated first then followed by the most soluble.
2- Rocks and ores slowly dissolved and different metal is deposited.
3- Ore minerals are formed later than the surrounding rocks.
4- Useless minerals occur within the ore.
5- Least ratio of metal in the ore.
6- In certain period and certain region conditions would be suitable to form mineral deposits.
7- Geological body from which metal extracted.
8- Content of metal in the ore.
9- Minerals points to the degree of temperature that mineral have been formed.
10-Ranges of uses from the ore.

Exam Committee:

*Prof. Dr. Amin Gheith** *Prof. Dr. Salah ayad* *Dr. Ghalib Essa* *Dr. Mohamed Awad*

Mansoura University Faculty of Science Physics Department Subject: Physics		First Term third Year :Geo-Physics Date : Jan 2013 Time allowed : 2 hours
Course (s): Elasticity & Fluid Mechanics phy332		Full Mark:: 60Mark

Answer THE FOLLOWING Questions: Each Question (15) Marks

[1] a- - Define the following terms: i – Stress concentration factor. ii – Velocity profile in pipes. Iii – Irrotational flow. iv – Creep. v – Bulk modulus. Vi – Fatigue. Vii- Fracture toughness. **[8] Mark**

b- A steel cable 3 cm^2 in cross-sectional area has a mass of 2.4 kg per meter of length. If 500 m of the cable is hung over a vertical cliff, how much does the cable stretch under its own weight? $Y_{steel} = 2 \times 10^{11}$ N/m^2. **[7] Mark**

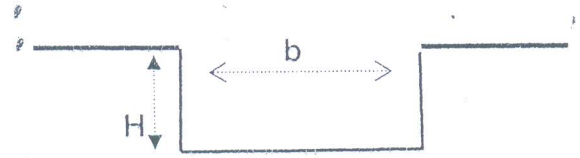
[2] a- Explain the role of each factor which affect the initiation of fatigue cracking. Illustrate how repeated bending forces can generate localized residual stress at the surface of the material **[6]Mark**

b- When water freezes, it expands by about 9%. By what factor would the pressure inside your car engine block increase if the water in it froze? Bulk Modulus of ice is 2×10^9 N/m^2. **[9] Mark**

[3] a- Illustrate and explain the crack initiation and propagation mechanism and associated with one complete cyclic stress. **[7] Mark**

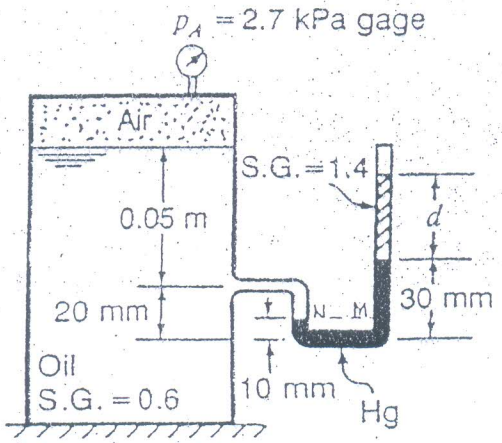
b- A high strength alloy steel has a yield strength of 1460 M Pa and a K1c of 98M Pa √m. Calculate the size of a surface crack that lead to catastrophic failure at an applied stress of ½ the yield strength **[8] Mark**

[4] a- Determine the total discharge flow over a rectangular notch of height H and width b as shown in figure. **[7] Mark**



b- In the figure shown .Find the distance d .Where the density of oil is 0.6 g/cm^3 and for mercury (Hg) is 13.6 g/cm^3 and for the liquid in the vertical tube is 1.4 g/cm^3

[8] Mark



Examiners: 1- Dr. Nabil Kinawy 2- Dr. Mohamed AboZeid

المستوى الثالث - جيوفيزياء - تحليل عددي / ٢٠٢٠

جامعة المنصورة
كلية العلوم
قسم الرياضيات

برنامج جيوفيزياء
المستوى الثالث

المادة: تحليل عددي
الزمن: ساعتان

Answer the Following Questions: **[80 Marks]**

Question 1 **[27 Marks]**

a) Use the Euler's method with h = 0.5 to approximate the solution of the initial value problem:

$$y' = 1 + \frac{y}{t} \quad , \quad 1 \le t \le 2 \quad , \quad y(1) = 2$$

b) Develop a divide difference table for the following data, then approximate f(2.35) using the Newton backward divide difference formula:

f(2) = 1.40, f(2.1) = 1.45,
f(2.2) = 1.48, f(2.3) = 1.52,
f(2.4) = 1.55.

Question 2 **[26 Marks]**

a) Approximate f(0.5) using the Language interpolating polynomial and the data below:
f(1) = 0, f(-1) = -2, f(2) = 3.

b) Use Simpson's rule to approximate:

$$\int_0^{\pi/4} \tan x \, dx$$ using appropriate intervals.

c) Approximate $\sqrt[3]{155}$ using Newton's method. Take the initial approximation to be 5.

Question 3 **[27 Marks]**

a) Use all appropriate formulas to approximate f' (0.6) with the following data:

f(0.2) = 0.98, f(0.4) = 0.918,
f(0.6) = 0.808, f(0.8) = 0.639,
f(1.0) = 0.384.

b) Solve the following system using the Gauss Jordan elimination:

$2x_1 + x_2 - 3x_3 = -1$,
$-x_1 + 3x_2 + 2x_3 = 12$,
$3x_1 + x_2 - 3x_3 = 0$.

With the Best Wishes to **Dr. Samia Abou Awad**, R.I.P.

المستوى الثالث - جيوفيزياء - جيولوجيا بترول سلمية ج. ٣١٧

Mansoura University
Faulty of Science
Department of Geology
El Mansoura - Egypt

Date: January 2, 2014
Final semester – Academic year 2013/2014
3rd Program Geophysics
Full Marks: 80 marks
Time allowed: 2 hrs

Final Exam in Subsurface Geology (G317)

Answer the following questions

Q1. Write briefly on each of the following: **(20 Mark)**

a. Paleontologic and geochronologic correlation. **(5 Marks)**
b. Economic importance of subsurface geology. **(5 Marks)**
c. The main categories of geophysical exploration methods. **(5 Marks)**
d. Data needed for subsurface evaluation. **(5 Marks)**

Q2. Write in detail on each of the following: **(20 Mark)**

a. The purposes of correlating stratigraphic sequences. **(10 Mark)**
b. Factors affecting distribution, frequency and mobility of elements. **(10 Mark)**

Q3. Give short notes on each of the following: **(20 Mark)**

a. Pure scientific importance of subsurface geology. **(5 Marks)**
b. Definition of subsurface geology. **(5 Marks)**
c. Regional correlation. **(5 Marks)**
d. Diffusion and effusion of chemical elements. **(5 Marks)**

All the best

لجنة الامتحان والتصحيح:
أ.د./ محمد عابد أ.د. آدم الشحات د. فريد مكروم د./ غالب عيسى*

جيوفيزياء جف ٣٠٣ - طرق التنقيب السزمية (١)

Mansoura University
Faulty of Science
Department of Geology

January, 09, 2014
Time allowed: 2 hours
Full Marks: 60 marks

Seismic Exploration Method I

(جف ٣٠٣)

Answer the following questions:

First Question *(20 marks, 5 for each)*

Write short notes on each of the following:

a) Geophone arrays in shallow refraction seismic method
b) Snell's law? Why is it important in seismology?
c) Properties of the subsurface that can be determined with a refraction survey
d) Reversed profile shooting is important in refraction seismic interpretation

Second Question *(20 marks)*

Do as shown in brackets

1. Conversion of an oblique incident P wave at an interface with two different velocities when $V_2 > V_1$ (Graphically only, *4 marks*)

2. Two situations where seismic refraction methods are not useful (Comment, *8 marks*)

3. The critical distance is the distance on a seismic refraction travel time-curve at which the travel times of the direct and refracted waves are the same. (Correct, *2 marks*)

4. Factors cause the amplitude to change as wave propagates are ...., ..., ... (Complete, *3 marks*)

5. Fermat,s principle (Write on, *3 marks*)

Third Question *(20 marks)*

Answer the following questions

a) What is geophone? How does it work? *(5 marks)*
b) Write in details on the vibroseis? *(15 marks)*

الممتحنون أ.د/ حمدى صيصه*- ا.د. ابراهيم كرات د. احمد الجلادى د. وليد شكرى

٣ جيوفيزياء - جيولوجيا حقلية وبعثات ج ٣٠٥

Al-Mansoura University
Faculty of Science
Geology Department
Course: Survey & Field geology: ج ٣٠٥
Time allowed: 2hours

First semester (2013-2014)

Third level Geophysics.

Date:16 /1/2014

Answer all the following questions:

THE FIRST QUESTION *: (20 marks):*
Write an essay on: preparing illustrations and writing reports?

THE SECOND QUESTION *:Answer five only (20 marks)*
1-Define three kinds of information in this sentence: limestone very rich in corals, deposited in shallow marine environment during the Cretaceous period.
2- Mention objects increased the potential of field work?
3- Complete the following sentence: The reconnaissance has two basic purposes.....
4- Explain: Topographic maps might be preferred for several reasons.
E- What are the four things which have to do to anticipate the final reports while still in the field?
6- Why weathering and related secondary characteristics are of great value in the field studies?

THE THIRD QUESTION: *Answer all the followings: (20 marks)*

1- Draw and interpret an isolated outcrop showing a vertical face exposing shale and sandstone. The shale beds bends near the discordant contact and it also contain a lens of sandstone. The contact has few millimeters gouge and slickenside directed horizontally. The laminations of the sandstone are parallel to contact. Moreover the sandstone contains fragments of shale like that to left.
2- Mention the elements of the stratigraphic section?
3- What is work made in the field camp or office?
4-Write short notes on ***one only*** of the following items:
A- Reconnaissance in field geology.
C- Finding and collecting fossils.

الممتحنون: أ.د. أدم الشحات و أ. د. محمود الشربينى و أ.د. حسنى حمدان* و د. غالب عيسى

المستوى الثالث - جيوفيزياء - جيولوجيا البترول ٢١٨٤.

Mansoura University
Faulty of Science
Department of Geology
El Mansoura - Egypt

Date: January 20, 2014
Final semester – Academic year 2013/2014
3rd Program Geophysics
Full Marks: 80 marks
Time allowed: 2 hrs

Final Exam in Petroleum Geology (G318)

Answer the following questions

Q1. Write briefly on each of the following: **(30 Mark)**

a. Surface occurrences of petroleum. **(10 Marks)**
b. Migration of Petroleum. **(10 Marks)**
c. Conditions of genesis of hydrocarbon and bacterial function. **(10 Marks)**

Q2. Discuss the origin of petroleum. **(20 Mark)**

Q3. Write on the following: **(30 Mark)**

a. Secondary stratigraphic traps due to groundwater activity. **(10 Marks)**
b. Oil traps formed by vertical movements. **(10 Marks)**
c. Oil traps formed by facies change. **(10 Marks)**

All the best

لجنة الامتحان والتصحيح:
أ.د./ محمد عابد أ.د. آدم الشحات أ.د. حمدي صيصة د./ غالب عيسى*