المستوى الثالث - جيولوجيا - حقلية ومساحة ٣٠٥ج

Mansoura University
Faculty of Science
Geology Department

Final Theoretical Exam
2nd Term 2014

Date: 21 / 05 / 2014
Time Allowed: Two Hours
Full Mark: 60 Marks

نظام :-- الساعات المعتمدة الفرقة :-- المستوي الثالث برنامج :-- الجيولوجيا

الورقة الامتحانية :-- ج ٣٠٥ المقرر:-- جيولوجيا حقلية ومساحة

Field Geology & Survey

Answer Three Questions from the Followings:-

(20 Marks for each question - 5 Marks for each part)

1- Answer the followings :--
   - A- How can you check the compass before use?
   - B- Strike and dip measurement.
   - C- Mention types of contacts.
   - D- Bearing from waist level.

2- Write briefly on the followings :--
   - A- Methods of investigation and recording observations in the field.
   - B- Safety Precautions for geologic hammer.
   - C- Collection of an oriented sample.
   - D- Uses of Altimeter, GPS, Stereoscope.

3- Describe in detail the followings :--
   - A- Vertical Angle Measurement.
   - B- Parts of Brunton Compass
   - C- Magnetic Anomalies.
   - D- The Geological Report.

4- Write short notes on the followings :--
   - A- Safety rules in the field.
   - B- 'V' shape of different outcrops.
   - C- True thickness of different beds.
   - D- Hand level method.

GOOD LUCK & BEST WISHES

لجنة التصحيح :- أ.د. محمد عابد – أ.د. عبد القادر زلطة – أ.د. عبد الله شاهين -- د. شعبان مشعل*

المستوى الثالث - جيولوجيا - علم الطبقات لتقدم ع ٢٠١٣
جيوفيزياء

Mansoura University
Faculty of Science
Geology Department
Course: Advanced Stratigraphy (G 303)
Marks: 60 marks

Second Semester (May 2014)
3rd level: Geophysics& geology
Time: Two hours
Date: 4/6/2014

Answer only three questions of the following questions

Question One: Answer both A &B)

A- Do the requirements for points from No1 to No12 (12 marks)

1-The integrated data of sequence stratigraphy are: 1-..... 2-..... 3- ..... 4-.....

2-The main controls of sequence stratigraphy are: 1..... 2-..... 3- ..... 4-..... 5..... 6.....7....

3- The importance of process Sedimentology in sequence stratigraphic: 1-..... 2.....

4-The importance of the stratigraphic component in sequence stratigraphy is 1- ..... and 2- .....

5- The sequence stratigraphy is a package because.....

6- There are 3 revolutions of sequence stratigraphy: first.....second.....third.....

7. The success of sequence stratigraphy appears in 1..... and 2.....

8- Draw a figure showing that the correlative conformities allow tracing sequences across an entire sedimentary basin.

9- Mitchum(1977) defined the sequence stratigraphic as .....

10- What means by the statement: "the application and definition of sequence stratigraphic concepts is independent of scale"?

11-Are sequence stratigraphic surfaces commonly true time lines?

12- What is the term expressing that "The substantial break or gap in the geological record characterized by a lack of continuity in deposition"?

B- Write short notes on two only of the followings. (8 marks)

1- Concepts of Depositional System, Facies, facies association and Facies Models? (4 marks)

2- Significance of Sedimentary Petrography and Pedology for sequence stratigraphy. (marks).

3- Noah flood as a probable event of sequence stratigraphy. (4 marks)

Question Two: Answer two only of the followings:

A- Discuss such statement: The sea-level changes and sedimentation is affected by changes to shoreline, sedimentation, transgression and regression, concept of accommodation, rate of sediment supply and cycle of sea-level change. (10 marks)

B- Write short notes on the causes of sea-level fluctuations? (10 marks)

C- Mention and discuss the common branches of the applied Stratigraphy? (10 marks)

Question Three:

A- Define the following basins using drawings: Shelf-break margins, Ramp margins, Rift margins, Foreland basin margins, and Growth fault margins. (10marks)

B- Write short notes on only two of the followings: (10 marks)

1- Relative sea level, tectonics and eustasy.

2- Sediment supply.

3- Historical review of sequence stratigraphy.

Question Four:

Write short notes on only two of the followings:

A- Sequences and system tracts. (10 marks)

B- Basin margin concept. (10 marks)

C- Basic principles of Ichnology dealing with classification and soft ground related ichnofacies. (10 marks)

D- Classification of environments. (10 marks).

المصححون: أ. د. حسنى حمدان* أ.د. عبد الله شاهين

المستوى الثالث - جيولوجيا - جيوفيزياء هندسية - ج ٣٠٨

MANSOURA UNIVERSITY
Faculty of Science
Geology Department
Mansoura – EGYPT

Sunday, June 08, 2014
2nd semester, Academic year 2013 – 2014
Full mark: 80
Exam time allowed: 2 Hrs (9.00–11.00 AM)

FINAL EXAM IN ENGINEERING GEOLOGY (G308)

FOR THE THIRD LEVEL GEOLOGY

Answer all the following questions

Q1: Differentiate between (support your answer with drawing if applicable) **(20 Marks)**

A. Primary and secondary creep (4 marks)
B. Slake durability index and polished stone value (4 marks)
C. Uniform and complex weathering (4 marks)
D. Integrated and mechanical discontinuities (2 marks)
E. Uniaxial compressive strength and uniaxial tensile strength (2 marks)
F. Brittle and ductile deformation (4 marks)

Q2: Complete the missing spaces with a suitable word(s) (30 Marks, one mark for each space)

A. The engineering geological matrix + (1)..... = (2).....
B. The (3)....., can be defined as that volume of ground which will be influenced by, or will influence, the engineering work.
C. Stresses encountered in the ground may result from the following causes, (4)....., (5)..... and (6).....
D. The only sure way to avoid the dangers of active volcanoes is to (7).....!
E. The use of earth materials is stressed because they have three aspects of major importance (8).....; (9).....; and (10).....
F. (11)..... is commonly taken to mean a piece of rock about the size of a laboratory test specimen without obvious cracks or breaks.
G. If a sample of material is placed under load, it (12).....; that is, it changes in (13)..... and perhaps also in (14).....
H. An important test for clayey soils is the (15)..... or consistency test. This examines the effect of changes of moisture content on the plasticity of clay soils.
I. A number of factors determine whether a rock will be worked as a building stone. These include: (16).....; (17).....; (18).....; and (19).....
J. One of the most important parameters of road aggregate is the polished stone value, which influences (20).....
K. Ideally, rock for building stone should be (21)....., (22)..... (23)..... and (24).....
L. Mudrocks containing significant amounts of disordered (25)..... tend to have moderate to high plasticity and therefore are easily workable.
M. The lithological factors that govern the durability of mudrocks include the degree of fracturing, the (26) ....., and the (27) ....., especially the nature of the clay mineral fraction.
N. The color of slate varies, red slates (if ferric more than twice ferrous oxide), greenish colored (if (28).....), purplish color (if (29).....) and blue and grey slates if (30).....).

لجنة الإمتحان والتصحيح*: أ.د. أحمد عبداللطيف د. غالب عيسي د. فريد مكروم د. وليد الديسطي*

Q3: Write short notes on each of the following: **(30 Marks)**

A. The philosophy of engineering geology (3 marks)
B. Example shows the importance of understanding the subsurface distribution of materials (3 marks)
C. Road aggregate (3 marks)
D. Evaluation of mudrocks for brick making (3 marks)
E. Portland cement (3 marks)
F. Importance of engineering geology (3 marks)
G. Climate as a significant factor with regard to Engineering Geology and civil engineering (3 marks)
H. Armourstone (3 marks)
I. Slaking and swelling of mudrocks (3 marks)
J. Characteristics of concrete aggregate (3 marks)

ALL THE BEST

Dr. Waleed Shukry El-Diasty

المستوى الثالث - جيولوجيا - جيولوجيا تحت سطحية جيولوجيا البترول (ج ٣٠٩)

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

Date: June 15, 2014
Final semester – Academic year 2013/2014
3rd Program Geology
Full Marks: 60 marks
Time allowed: 2 hrs

Final Exam in Subsurface Geology (G309)

Answer the following questions

Q1. Complete the following: **(18 Mark)**

a. Subsurface geology defined as an applied science that involves techniques about ..... **(3 Marks)**

b. The knowledge of subsurface geology has several aspects of importance. These include ..... **(3 Marks)**

c. Diffusion is related to the tendency of a ....., to come in equilibrium chemically and ..... with its..... **(3 Marks)**

d. The geologist is principally concerned with exploration and assists in various phases of exploitation, such as:....., ..., ..., and ..... **(3 Marks)**

e. Primary stratigraphic traps are those with permeability produced during ..... such as ....., ... and ..... **(3 Marks)**

f. Secondary stratigraphic traps are those with permeability produced ..... and divided into ..... **(3 Marks)**

Q2. Write on each of the following: **(22 Marks)**

a. Migration of petroleum. **(8 Marks)**

b. Primary stratigraphic traps. **(7 Marks)**

c. Surface occurrences of petroleum. **(7 Marks)**

Q3. Define each of the following: **(20 Mark)**

a. Correlation. **(4 Marks)**

b. Drilling. **(4 Marks)**

c. Kerogen shale. **(4 Marks)**

d. Oil and gas pool, field and province. **(4 Marks)**

e. Diffusion and effusion **(4 Marks)**

All the best

لجنة الامتحان والتصحيح:
أ.د. آدم الشحات د. فريد مكروم د./ غالب عيسى* د./ حمدي سراج

MANSOURA UNIVERSITY
Faculty of Science
Geology Department
Mansoura-EGYPT

Date: Sunday, 01 June **2014**
Final semester –Academic Year 2013/2014
Full Mark: 60
Time allowed: **2** Hours- (*09.00-11.00 reading time*)

B. Sc. Exam in GPHY-302 (Introduction to Well Logging) for Geology Program (Credit Hours Board)

Introduction to Well Logging (Relating to material taught by Dr. Mohammed Awad Ahmed)

Instruction: Answer All the following questions: Q1 (35 %) (A and B), Q2 (33.3%) (A and B), Q3 (31.7 %), and (A and B). In your answers use labeled diagrams and provide specific, named examples wherever possible. No aids allowed.

Q1-A) TRUE/FALSE (10 MARKS)

Directions: Read the statement completely and determine if the statement is **true** or **false**. In the blank provided, write "**True**" for a true statement and "**False**" for a false statement. Each True/False question is worth **1 mark**. The True/False section is worth a total of **10 marks**.

_____ 1. The borehole's actual diameter and shape depend on the formation drilled.

_____ 2. The best known use of borehole temperature measurements, simply as BHT values, is for calculating organic matter maturity

_____ 3. When a rock with low thermal conductivity is encountered, it will show a low thermal gradient

_____ 4. The simple gamma ray log gives the radioactivity of the three elements combined, while the spectral gamma ray log shows the amount of each individual element contributing to this radioactivity

_____ 5. If there is a direct, continuous flow of formation water or hydrocarbon fluids into the borehole, then the logged temperature shows a marked increase at the inflow point

_____ 6. Salt is inefficient; it keeps heat in and has a low thermal conductivity. Shale, conversely is very efficient, let's heat escape rapidly and therefore has a high thermal conductivity

_____ 7. The spectral gamma ray log is affected by the mud additives barite and KCl. Barite does not affect the result while KCl will only affect the potassium result

_____ 8. If gaseous hydrocarbons enter the well, the gas expands on entering the borehole, dropping rapidly in temperature

_____ 9. A frequent cause of tight spots is abundant illite in the clay mineral mixture

_____ 10. A persistent rise in temperature with depth is usually expressed in terms of a temperature gradient, that is in ·C increase per kilometre of depth

Q1-B) MATCHING (11 MARKS)

Directions: Fill in the blank next to each item with the correct corresponding **letter in capital letters** (**A-I**). For each item there is only **one correct** answer. NO option will be used more then once. Each matching question will be worth **1 mark**. The matching section is worth **11 total marks**.

Answer	Theme items		Option
	1. The SGR, or standard gamma ray,	A	removing that part of the signal caused by deviation of the actual environment from the ideal
	2. The theoretical concepts of well-logging techniques were developed with the assumption	B	Environmental correction and Thermal maturation of organic matter
	3. BHT Measurements uses are	C	, represents the contributions of only the thorium and potassium in API units
	4. The CGR, or computed gamma ray curve	D	use of the Th/K rario
	5. , the difference between the SGR and the CGR	E	is the total contribution of the three elements in API units.
	6. Depositional environment and condensed sequences	F	Use of the Th/U ratio
	7. The borehole environmental corrections consist of	G	of an infinite, homogeneous, and isotropic medium.
	8. Continuous Temperature Measurements uses are:	H	is the contribution, in API units, of uranium.
	9. Dominant clay mineral and detrital mineral content	I	Overpressure identification and locating fluid movements
	10. Well logging is defined as	J	is the process which attempts to combine a knowledge of tool response with geology, to provide a comprehensive picture of the variation of the important petrophysical parameters with depth in a well
	11. Well logging interpretation	K	a record of characteristics of rock formations traversed by a measurement device in the well bore

Q2-A) MULTIPLE CHOICE (MULTIPLE ANNSWERS) (12 MARKS)

Directions: Read each question and all the answers thoroughly and then identify the choice that best completes the statement or answers the questions below. For each question there are **multiple correct answers**. Place the correct answer (**A-D**) in **capital letters** in the box provided next to each numbered question. Each multiple choice question will be worth a total of **2 marks**. The entire multiple choice section is worth **12 marks**.

[ ] 1. Typically the temperature tool will give nor just the ------- temperature but also, a temperature -----.

A. absolute
B. gradient
C. static
D. differential

[ ] 2. Drilling into high pressure shales (.....) causes a .....in temperature downwards.

A. under compacted
B. compacted
C. sharp increase
D. sharp decrease

[ ] 3. Uranium passes into sediments in three principal ways:.....

A. adsorption by organic matter
B. heavy minerals such as zircon,
C. chemical pracipitation
D. chemical reaction in phosphorites

[ ] 4. Natural radiation in rocks comes essentially from only three elemental sources: the radioactive elements of the --------- family, of the ----------family and of the radioactive isotope of ---- .

A. thorium
B. uranium-radium
C. carbon
D. potassium 40K

[ ] 5. The simple gamma ray sonde can be combined in many tools; it is run both -------- in the borehole (sonic and resistivity tools) or against the borehole wall, that is ------- (density and neutron tools).

A. circular
B. incircular
C. eccentered
D. centered

[ ] 6. The clay material may be distributed in sand formations in three different forms: ....., ..., and .....

A. dispersed
B. compacted
C. laminated
D. structural

Q2-B) SEQUENCE (8 MARKS)

Directions: Fill in the blank next to each item with the **correct order number**. For each item there is only **one correct** answer. Each sequence question will be **worth 1/2 mark**. The sequence section is worth **8 total marks**.

1. List a step by step the procedure to analyze well logs. Be specific and detailed

_____ A. Porosity and water saturation determination
_____ B. Cutoffs report
_____ C. Formation temperature and Rw determination
_____ D. Clay volume analysis
_____ E. Single indicator and double indicator
_____ F. Borehole environment corrections for different logs
_____ G. Reservoir zone (porosity more than 10% and volume of shale less than 30%)
_____ H. Depth matched readings
_____ J. Pay zone (porosity more than 10%, Vsh less than 30%, and Sw les than 50%)

2. The seven distinct sections of Wireline log layout are: ..... , ..., ..., ..., ..., ..., and .....

_____ A. Scale section
_____ B. Logging/Calibration Constants
_____ C. Scale section
_____ D. Log trailer
_____ E. Log data
_____ F. Repeat Section
_____ G. Header information

Q3-A) FILL IN THE BLANK (9 MARKS)

Directions: Read the statement below completely and thoroughly then fill in the blank using the words provided in the word bank. Each word will only be used once and there are some words that won't be used at all. Choose the word that **BEST** completes the statement. Each answer will be worth a **1/2 mark**. The fill in the blank answer section is worth a **combined 9 marks**.

Word Bank

twice	**bow-springs**	**Horner plot**	**bit**
odometer	**caving**	**magnetic markers**	**logger's**
equal	**formation fluids**	**arms**	**separate**
cuttings	**on gauge**	**mudcake**	**drillers**
en-larged	**smaller than the bit diameter**		

1. Some sondes are designed to be operated in a centralized position in the borehole. This operation is achieved by the use of ------attached to the exterior, or by more sophisticated hydraulically actuated-------.

2. To correct BHT values, the frequently applied methods is called the.....

3. The microlog-caliper reading is then the hole drilled diameter minus ----- the mudcake thickness

4. The principal functions of drilling muds are: to remove the --------, to prevent ---------- from flowing into the borehole, to prevent the borehole walls from -----, and to cool the ------

5. Logger's depth, generally the more accurate, is measured with the wireline cable. There are two ways, by using -------on the cable and by direct measurement with an--------

6. The diameter is actually ----------is usually the case in permeable formations drilled with mud that contains solids.

7. In boreholes, two sets of independent depth measurement exist side by side; ----------depth' and ----------depth'

8. A Section drilled to---------is usually in the case of hard, consolidated, and impermeable formations.

9. The solid particles that exceed the pore size are retained at the formation face. Their buildup forms a plaster-like layer of very low permeability called a ----------

10. In Section with the borehole's actual diameter is--------by as much as 3½ in occurs in soft, un-consolidated formations because of the scouring effect of drilling muds.

11. In circular boreholes, the four-arm device caliper logs are -----. They ------- in noncircular holes as one caliper reads the long axis and the other reads the short axis

Q3-B) SHORT ANSWER (10 MARKS)

Directions: Read the statement below completely and thoroughly then fill in the blank with a short answer that **BEST** answers the question. The short answer section is worth a **combined 10 marks**.

1. Geochemical behavior of potassium, thorium and uranium and natural radioactivity (6 Marks)

2. The unwanted environmental effects of gamma ray logs (4 Marks)

BEST WISHES