MANSOURA UNIVERSITY
Faculty of Science
Geology Department
Mansoura-EGYPT

Date: December 29, Saturday 2012
First semester - Academic Year 2012/2013
Full Mark: 60
Time allowed: 2 hrs. (12.00-02.00 PM)

B. SC. EXAM IN GEOMORPHOLOGY AND HYDROGEOLOGY OF EGYPT

(G402) - GEOLOGY PROGRAM - FOURTH LEVEL

QUESTION ONE: Write short notes on each of the following
(Answer six points only; 18 mark)

1. The Northern Coastal Zone ridges and depressions. (3 Marks)
2. Wadi El Natrun Depression. (3 Marks)
3. Sinai Folded complex and isolated hills. (3 Marks)
4. Raqabet El-Naam Fault System. (3 Marks)
5. Sinai Nubian Sandstone aquifer. (3 Marks)
6. Maryut tableland. (3 Marks)
7. Great Bitter Lakes and Isthmus Basin. (3 Marks)
8. Evaluation of water for livestock and poultry purposes. (3 Marks)

QUESTION TWO: Fill-in the spaces (24 Mark)

1. The groundwater investigation in the NW coastal zone revealed three forms of groundwater occurrences are; (1) ....., (2) ..... and (3) .....
2. Both a gulf and a bay are the same things, and the only difference that is pointed out is in (4) .....
3. The most common Sinai Eocene aquifer natural springs along joint plains are (5) ....., (6) ..... and (7) ..... springs.
4. The Quaternary aquifer in Sinai Peninsula encompasses four aquifer systems are (8) ....., (9) ....., (10) ....., and (11) .....
5. The West Nile Delta old coastal plain includes; (12) ..... ridge, (13) ..... ridge, (14) ..... ridge.
6. (15) ..... sand dunes chains extend from Gebel El Washika till Faiyum depression, the longitudinal orientation is mainly controlled the NW prevailing winds.
7. (16) ..... aquifer, moderately potential, restricted to Wadi El Natrun area, composed of clay facies with interbeds of water-bearing sandy layers.
8. The Nile Delta flood plain in the East Nile Delta is dotted with a number of (17) .....; hills of clays where the low lands were filled with loose quartz sand.

9. The lower salinity of the Quaternary aquifer in the East Nile Delta in the north and west directions is attributed to (18) ....., whereas the maximum values along Cairo-Ismailia Desert Road is due to (19) .....
10. Excessive amounts of (20) ..... can cause respiratory and brain damage, hallucinations, forgetfulness, nerve damage.
11. There are four main aquifers having wide extension along the northwestern coastal zone; (21) ....., (22) ....., (23) ....., and (24) .....

QUESTION THREE: Mark true or false (make further illustration if applicable) for the following statements (answer six points only; 18 Mark)

1. The Northern Coastal Belt headlands extend in a parallel trend of NW-SE direction and widen seawards.
2. Wadi El Tumilat depression is surrounded by old terraces of early Pleistocene gravel, filled with sands and clayey sands.
3. El Khanka sand dunes extend in a NE-SE direction, arranged in a series of elongate sand ridges.
4. El Manzala lake sabkhas, the largest lake of Egyptian coastal belt, extends NW-SW.
5. Chromium is mostly found as a result of human activities, excessive amounts can cause Anemia, blood pressure and behavioral disruption of children.
6. Moving westward in the Northern Coastal Belt, the numbers of ridges decrease and the drainage lines increase.
7. The status of the Quaternary aquifer in the East Nile Delta changes from confined to semi-confined to variable conditions eastward.

Good luck

Dr. Waleed Shukry El Diasty

المستوى الرابع- جيولوجيا- جيولوجيا اقتصادية ج ٤١٢

قسم الجيولوجيا
امتحان الترم الأول
التاريخ ٢٠١٣/١/١م

المستوى الرابع/ جيولوجيا
المادة: جيولوجيا إقتصادية
ج ٤١٢

الدرجة الكلية ٦٠ درجة — الزمن: ساعتان

اكتب بالتفصيل عما يلى (كل فقرة ست درجات)

١- الخواص الضوئية للمعادن.

٢- الاستبدال الأيونى، الخداع الشكلى فى المعادن.

٣- تكون المعادن من الصهير.

٤- تصنيف الرواسب المعدنية وخاماتها.

٥- رواسب المتبخرات، رواسب الكربونات.

٦- رواسب البوكسايت واللاتيريت، رواسب الفحم.

٧- المحاليل المائية الساخنة وبعض رواسبها المعدنية.

٨-التقسيم الكيميائى للمعادن مع ذكر معدن وتركيبة الكيميائي لكل قسم .

٩- الرواسب المعدنية لحقب الميزوزوى فى مصر.

١٠ - الرواسب المعدنية للزمن الثالث فى مصر.

أ.د. محمود الشربينى، أ.د. أحمد عبد اللطيف، د. هشام سلام، د. طارق عنان

المستوى الرابع - جيولوجيا - صخور القاعدة لمصر ج ٤٠٨

Mansoura University
Faculty of Science
Geology Department

Date: 5 / 1 / 2013
Time: 2 Hours

كلية العلوم
جامعة المنصورة

First Term Exam January 2013
Forth Level
Program: Geology
Subject: ج408
Course: Basement rocks of Egypt
Full Mark: 60 Marks

ANSWER THE FOLLOWING QUESTIONS (20 MARKS For Each)

Question one

A- Answer with (√ or X) with correction; **(10 Marks)**

1- BIF of Wadi Karim belongs to oxide facies, while BIF of Um Anab belongs to oxide and mixed carbonate-oxide facies.

2- Younger metavolcanics are related to supra-subduction zone volcanisity.

3- Younger gabbros and metagabbros (of metagabbro-diorite complex) are similar to each other.

4- Basal conglomerate of Hammamate sediments are similar to metaconglomerate of metasediments.

5- Older granites are not affected by metamorphism and host magmatic enclaves.

B- Complete the Following; **(10 Marks)**

1- The field characteristics of metasediments are ....

2- The BIF of Wadi Karim is composed of ...., while BIF of Um Anab is composed of...........

3- Suprasubduction zone ophiolite is characterized by the presence of .... lavas, which supporting the fore-arc origin.

4- Age dating of younger (Intrusive) mafic-ultramafic rocks is given by .... Ma.

5- Rock association of metagabbro-diorite complex are ....

6- The main characteristics of post granite dykes are; 1- ...., 2- ...., 3- ....

Question Two

Correlate briefly between the following two pairs:

A- Granite gneisses and gneissose granites. **(7.5 Marks)**

B- Post granite dykes and sheeted dykes. **(5 Marks)**

C- Younger granites and older granites. **(7.5 Marks)**

Question Three

A- Write on the following characteristics of the Dokhan volcanics; mode of flow, varieties, deformation, age dating, thicknesses and localities. **(10 Marks)**

B- Write on Hammamate sediments. **(10 Marks)**

لجنة التصحيح: أ.د. / أحمد عبد اللطيف المتولى   أ.د. / عادل جنيدى   أ.د./ حمدى صيصة   د./ هشام عليوة

Mansoura University
Faculty of Science
Department of Geology

4th Level, Geology Students
First Semester Exam, Basin Analysis (G404)
Academic Year: 2012-2013
Date: 12/1/2013, Time Allowed: 2 HOURS

Answer BOTH question one and two (obligatory):

QUESTION ONE

a) Define each of the following: **(15 marks)**

1- Uniform stretching.
2- Accommodation space.
3- Simple shear.
4- Buckling.
5- Non-uniform stretching.

b) Complete missing parts in the following sentences: **(15 marks)**

1- Depositional sequence is a stratigraphic unit composed..... of genetically related strata and bounded..... .....or.....
2- In buckling, the typical wavelengths observed are.....
3- Irregular or aperiodic folding develop at.....,.....lithosphere, where the deformation is strongly affected.....,.....,....., and.....
4- A weathering mantle forms between pristine bedrock and the land surface called.....
5- Flexure of the lithosphere may cause.....or.....a sedimentary basin. This produces.....

QUESTION TWO

Put true or false and correct false sentences **(30 marks)**

1- Foreland basins are elongate or arcuate, asymmetrical basins. ( )
2- Eustasy is global sea level measured from the sea surface to a moving datum. ( )
3- Regions of rifting are characterized by positive Bouguer gravity anomalies, low heat flow. ( )
4- Volcanically active margins: characterized by extrusive basalts, lower crustal igneous accretions and significant uplift at the time of break up. ( )
5- The East African Rift appears a good example for passive rifting whereas Rio Grande Rift is an active rifting. ( )
6- In continuous model of non-uniform stretching, there is a smooth transition in the stretching through the lithosphere. ( )
7- McKennzie assuming that there is a difference between crustal and lithospheric extension. ( )
8- The thickness of lithosphere under oceans varies from 20 km at mid ocean ridges to 40 km in the coolest parts of the oceans. ( )
9- Asthenosphere is stronger than the lithosphere and is unable to undergo deformation. ( )
10- Thermal relaxation following ductile extension of the lithosphere, leading to regional postrift subsidence. ( )

Answer only ONE question of the following (optional):

QUESTION THREE

a) Compare between each of the following pairs: **(14 marks)**

1- Lowstand systems tract and highstand systems tract (illustrate with drawing).
2- Active rifting and passive rifting (illustrate with drawing).
3- Discontinuous and continuous non uniform stretching.
4- Aulacogens and impactogens.
5- Transgressive systems tract and maximum flooding surface (illustrate with drawing).
6- Active and passive rifting.
7- Eustatic sea level and relative sea level (illustrate with drawing).

Please flip the paper ⟶

b) Write a brief report on **(6 marks)**
- Controls on sediment yield.
- Regolith.

QUESTION FOUR

a) Choose between parentheses: **(10 marks)**

1- The short wavelength (30-60 km, 40-50 km, 50-60 km) corresponds to crustal folds, whereas long wavelength (100-150 km, 150-200 km, 200-350 km) corresponds to mantle folds.
2- Adriatic basins (southern Europe) are thought to be formed due to (uniform stretching, lithospheric buckling, strike slip faulting) of the Adriatic crust.
3- Water depth is (measured relative to a moving datum, measured relative to a fixed datum, the distance between sea surface and seabed).
4- The maximum flooding surface represents (the first, the middle, the last) part of the significant flooding surfaces.
5- Sedimentary basins should be considered as (static, dynamic, static-dynamic) models occupied by complex physical and biological processes.

b) Write short notes on **(10 marks)**
- Chemical weathering.
- Regular or periodic folding.
- Mantle.
- Parasequences.

With best wishes
Dr. Tarek Anan

المستوى الرابع - جيولوجيا الفترة الزمنية الرابعة - ٢٠١٣
جيولوجيا

Mansoura University
Faculty of Science
Geology Department
Date: 15/01/2013

First Term Exam. (Jan. 2013)
Fourth Level (Geology)
Course No.G407
Course: Quaternary Geology& Delta
Time: 2 hours Full Mark: 60

Answer the Following Questions

Question One : Tick (√) or (X) and correct

1- Quaternary as geochronologic unit is epoch.
2 - The Pleistocene ended at 12 Ka BP.
3- Volcanic eruptions can cause short term cooling because of increasing of CO in the atmosphere.
4- The eccentricity is a measure of departure of the earth orbital ellipse from circularity.
5- The change of obliquity from 22.1 to 24.5 takes approximately 21 Ka years.
6- Glaciers move downhill due to internal deformation of ice and gravity.
7- The term moraine is applied to a series of formation all of which are composed of till .
8- A streamlined hills deposited in the glacial valley is kams.
9- The steric change is responsible for the greater part of sea level rise.
10- The older stage in the Quaternary of the northwestern Europe is the Saalian.
11- All modern deltas exist in similar geologic settings .
12-Processes within the drainage basin of a river determine the sediment and water supply .
13- The delta plain is subdivided into different physiographic zones.
14- The active delta plain is occupied by the functioning distributary channels.
15- In tropical conditions, evaporates and chemical precipitates form the major delta deposits.
16- The sediment yield is a function of drainage basin area and river discharge.
17- When outflow velocity is high, the deposited mouth bar is quite thick.
18- Low nearshore wave power is commonly associated with steep concave offshore.
19- The most significant influence of wind system is determining the pattern of delta switching.
20- When basin geometry consists of closed-end trough ,the sediment is deposited parallel to axis.

(20 marks)

Question Two: Complete

1- The earth،s eccentricity varies due to attraction with gravity of.....and.....
2- .....moraine covers the surface underneath the glacier.
3- .....lakes are part of outwash plain.
4- .....and..... are two landforms characterizing the permafrost area
5- Loess is Aeolian sediment consists of..... silt and.....sand with carbonates
6- A pollen association consists of.....and .....characterizes glacial stages
7- If ó O18 is ..... the sample is enriched and if it is..... .the sample is depleted relative to standard.
8- The Quaternary of low latitude areas is subdivided into.....and.....stages.
9- The Quaternary of USA system is based on.....and.....
10-The first and last glacial stages of the Alpine system are .....and.....
11-A major river system consists of .....,.....,.....and.....
12-The upper delta plain is the .....portion of the.....delta.
13-The geometry of the distributary mouth bar depends on.....,.....and.....
14-When frictional forces and buoyancy are significant ..... bar is common.
15-The seaward bifurcation channels are common in the delta with.....,.....and.....
16-Sand bodies are oriented parallel to shoreline under.....and.....
17-The morphologies of deltas are functions of.....and.....
18-The effect of tidal currents is.....mixing and.....transporting.
19-Distributary channels are normally associated with.....,.....and.....
20-According to Scott,(1969) deltas are classified into.....,.....,and.....

(20 marks)

اقلب الصفحة

Prof.O.Hegab and Prof.A.Elshahat لجنة التصحيح:

Question Three: Choose the correct answer

1- The earth،s axial tilt is
a-obliquity b-eccentricity c- precession

2- The continental glacier is
a- ice sheet b- ice shelves c- ice stream

3- Glaciers erode a terrain principally through
a-abrasion b-freezing c- thawing

4- The lamination of glacial varve is due to changes in
a- mineralogy b- texture c- fossil content

5- The high fertility of loess soil is due to
a-organic content b- porosity c-carbonate content

6-The Pingo is a periglacial structure formed on
a- tills b- active layer c- loess

7- The Late temperate zone of interglacial stage is characterized by
a- Picea b- Pinus c- Quercus

8 –The global change in sea level due to melting of ice cap is
a-eustatic b-steric c-isostatic

9- Water stored in ice sheet is
a-enriched inO18 b- depleted in O16 c- enriched inO16

10-The last interglacial stage in the Quaternary of the Midwest US system is
a- Sangamonian b- Hoxonian c- Eemian

11- A delta is generally formed when one of the following processes is prominent
a- wind regime b- river discharge c- wave activity

12-The coarsest sediments build up
a- subaerial delta plain b- mouth bar c- prodelta

13- The lunate bar is formed under the prominence of
a- inertia b- friction c-buoyncy

14- In the receiving basin that display low subsidence the produced deltaic sediments are
a- thick b- various c- thin

15-Modern day example of a delta basin in the form of closed-end narrow trough is
a-Strait of Malacca b- Persian Gulf c- Niger river

16- A small delta is occupying the interdistributary bay of the delta which is
a- river dominated b- wave dominared c- tide dominated

17- When wave energy and long shore currents are dominant , the produced delta is
a- elongate b-lobate c- cuspate

18- In the tide dominating delta the sand of the distributary channel is
a- bidirectional C.B b- herring bone C.B c- unidirectional C.B

19- The area south of the Manzala lagoon is covered by
a- hypersaline flat b- wetland c- sand dunes

20- The surface of Nile Delta front is
a- smooth b-scarped c- ziggzaged

(20 marks)

Good Luck

Prof. Omar Hegab