المستوى الرابع- جيوفيزياء (ديف ٢٠٠٤) - جيوفيزياء هندسية وبيئية

Mansoura University
Faulty of Science
Department of Geology

January, 14 2012
Time allowed: 2 hours
Full Marks: 80 marks

1st term exam (engineering and marine geophysics)

Answer the following questions:

Part 1 (Engineering Geophysics)

First Question

a) Discuss in details engineering geophysics needs — 7 marks

b) Deduce the relation of DC resistivity in half space — 7 marks

c) Write on the basic principles of time domain electromagnetic — 6 marks

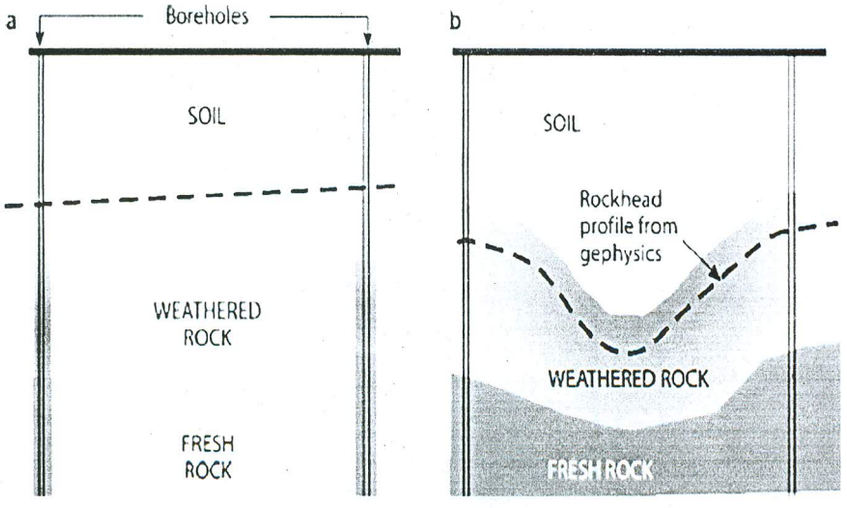
Second Question

a) Complete: — 6 marks

In GPR, higher frequencies provide better subsurface resolution at the expense of ..... The environmental factors affecting on engineering applications include such features as ....., ..., ... and ..... The *seismic method* is becoming more popular in geotechnical investigations because of its ability to give valuable information on the .....

b) Illustrate in detail a case study of Geophysics in engineering applications. — 7 marks

c) Comment on the figure given below. — 7 marks



المصححون:
أ.د/ حمدي صبصبة* - أ.د/ محمد رفعت شريف - أ.د/ ابراهيم كرات - د./ عادل كامل*

Part 2 (Marine Geophysics)

Third Question

Write short notes on:

a) GI Air gun 10 marks

b) Air bubble problem in marine seismic sources 10 marks

Fourth Question

Write on *ONLY FOUR* of the following field layouts of 3D marine seismic:

5 marks for each

a) Swath

b) Brick

c) Button patch

d) Flex-bin

e) Radial

المصححون:

أ.د/ حمدي صبحية*- أ.د/ محمد رفعت شريف سيد- د/ ابراهيم كرات - د/ علاء كامل*

(٤٠٩٤) ٤ جيوفيزيا - طبقات مصر

Mansoura University
Faculty of Science
Geology Department
Date 31/12/2011

]Final-Term Exam. (Jan. 2012)
Fourth Level (Geophysics)
Subject: G409
Course: Stratigraphy of Egypt طبقات مصر
Time: 2 hours Full Mark: 60

G409: STRATIGRAPHY OF EGYPT

Answer the following questions: (20 marks for each question)

1. a. Illustrate a stratigraphic column for the Paleozoic succession of Um Bogma area, west-central Sinai and refer to its economic importance. (10 marks)

b. Complete the following sentences. (10 marks; one for each space)

1. The ---------- Formation is mainly Turonian in age and is subdivided by oil companies working in the Western Desert into 7 members.
2. The ---------- Shale ranges in age between the Paleocene and the Eocene, underlying the ---------- Formation and its type locality is Gabal Awaina in the Nile Valley
3. The Raised Beaches and Coral Reefs are extensively developed along the ---------- Coast and are of ---------- age.
4. The ---------- Formation is Permo-Triassic in age, composed of a ---------- succession and is widely distributed in the Gulf of Suez Region.
5. The Qatrani Formation is ---------- in age and is widely distributed in the ---------- Province.
6. In Egypt, Triassic deposits are known from Gabal ---------- in NE Sinai.

2. a. Arrange the following rock units from older to younger; mention the age and dominant lithology of each. (12 marks)

- The Malha Formation
- The Aheimer Formation
- The Mokattam Group
- The Siwa Group
- The Ras Malaab Group
- The Sudr Chalk
- The Wata Formation
- The Masajid Formation.

b. Mark right (√) or wrong (X) and correct the false words. (8 marks)

1. The Bahariya Formation is Cenomanian in age and is widely distributed in the Gulf of Suez region.
2. Oolitic limestone ridges are well developed along the northwestern coastal plain of Egypt and are of Cretaceous age.
3. The phosphate deposits are well developed in central Egypt and are named the Khoman Chalk.
4. The Burg El Arab Formation is Early Carboniferous in age and is subdivided into four members of which two at least are payzones for oil and gas.
5. The Abu Madi Formation is known from the subsurface of the Nile Delta area and is a manganese-producing unit.
6. The Miocene succession in Siwa area includes the Moghra and Risan Aneiza formations.
7. The Matulla Formation is well developed in the Sinai and is Aptian-Albian in age.
8. The Upper Cretaceous Quseir Variegated Shale is well developed in central Egypt underlying the phosohate deposits.

3. Compare between each pair of the following: (10 marks each)
   a. The Paleozoic succession in the Abu Durba area and in the Gulf of Suez wells.
   b. The Jurassic succession in Northern Sinai and in the subsurface of the north Western Desert.

Best Wishes

لجنة الإمتحان والتصحيح*:

أ.د.محمود قورة* أ.د. عبد الله شاهين د. هشام سلام أ.د. محمد عابد

Mansoura University
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Geology Department
Date: 21/01/2012

First Term Exam. (Jan. 2012)
Fourth Level (Geology &Geophysics)
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- Volcanic eruption causes drop in atmospheric temperature due to P2O5 condensation.
2 - Continental glaciers cover more than 50,000 km2.
3- The glacier starts to move when the snow line is at higher altitude.
4- All morains are made up of till deposits.
5- Glacial varve is formed of fine and coarse sediments interplay.
6- Rock glacier is typical glacial landform.
7- The interglacial stage is characterized by mixed oak forest.
8- Because of glacial isostacy , earth surface in the proglacial area is rebound after ice thaw.
10- Fluvial lakes are quaternary evidences in the mid latitude areas.
11- Rock types of the drainage basin determine the nature of deltaic sediments .
12- Modern-day deltas, all belong to the same geologic settings.
13- Both fluvial and deltaic sediments posses a fining upward sequence.
14- In the river dominated deltas, the interdistributary areas are filled with marshes.
15- The distributary mouth bar of a delta is middleground when outflow velocity is high.
16- The abandoned portion of delta plain is subjected to marine processes .
17- The delta progradation is controlled by the gradient of continental shelf.
18- Low discharge of river result in accumulation of shell fragments in the lower delta plain.
19- The delta plain is characterized by large and continuous sand body.
20- The total discharge of Nile is similar to that of Mississipi.

(20 marks)

Question Two: Complete

1- The stages of ice formation are.....,.....and.....
2- Milankovitch attributed climatic changes to variations in.....,.....,and.....
3- The terminal part left after glacier retreat is occupied by.....and.....
4- Till is.....and.....sediment
5- Periglacial area is not buried by glacial ice but subjected to.....
6- Landforms related to periglacial environment include.....,....., and.....
7- The pollen association of glacial stage include.....and.....
8- During glacial stages, sea level is falling due to.....and.....
9- The ice cap is always depleted in .....
10-The bases of Quaternary stratigraphy in the Alpine system is.....
11-The upper delta plain exist.....
12-The drainage basin with tropical climate yields .....
13-.....correlative with deep oceanic wave power
14-The long shore current is responsible for.....
15-The distrbutary mouth bar is..... .when the.....is dominated.
16-The radial mouth bar display .....sediments.
17-The near shore wave power is a function of.....
18-The tidal channels are filled with.....sand
19-The linear mouth bar is a witness of .....phase.
20-Evaporites are widespread in the delta plain with.....

(20 marks)

اقلب الصفحة

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

Question Three: Choose the correct answer

1- Chronostratigraphically Quaternary is a
a-period b-epoch c- stage

2- The axial obliquity occurs in the period of
a- 100Ka b- 41Ka c- 22Ka

3- The streamland snake-like ridge formed under glacier is
a-eskar b- kam c- drumline

4- The annual varve sediments are formed in
a- marine water b- fresh water c- super saline water

5- The permafrost is topped by
a- frozen layer b- active layer c-saturated layer

6-The pollen grains characteristic to interglacial period include
a- Pinus b- Betula c- Ulmus

7- Sea level rise due ice melt water is
a- hydrostasy b- eustasy c- isostasy

8 –The shrinkage of pluvial lake indicate that the climate was
a-warm-wet b-cold-dry c-warm-dry

9- The Quaternary stratigraphy of north USA is based on
a-till-soil b- terrace-soil c- pollen association

10-The peat deposits are widespread during Holocene in the
a- Boreal chronozone b- Sub Atlantic chronozone c- Atlantic chronozone

11- When outflow velocity is high and receiving basin slope is low, the produced bar is
a- lunate b- radial c- linear

12-In the wave dominated delta the interdistributary bay is filled with
a- dune sand b- evaporites c- marshes

13- When water discharge is erratic, the sand body of the alluvial valley is
a- shoestring b- sheet c-lens

14- The cross-bedding of the river dominating distributary chanel bar is dipping
a- bidirectinally b- downstream c- upstream

15-When the river discharge is too high , it will
a-reduce shelf slope b- reduce buoyancy c- reduce friction

16- In the tide dominated delta, the coastline usually occupied by
a- coastal barrier b- lagoons c- estuaries

17- The deltaic sand body shows lateral continuity when subsidence of receiving basin is
a- high b-low c- moderate

18- When the discharge is high relative to the tide, the delta coast is
a- elongate b- lobate c- cuspate

19- The near shore wave attenuation rate depends on
a- shelf slope b- wind regime c- deep wave power

20- The modern Nile delta is now in a
a- stable phase b-constructive phase c- destructive phase

(20 marks)

Good Luck

Prof. Omar Hegab