



Answer the following Questions

I- Micropaleontology

Question One: Complete the following statements: (15 Marks)

- Because conodonts are not soluble in(1)... they may be extracted by the use of dilute solutions of these acids from calcareous rocks containing them.
- The ammonites as(2)... and(3)... continue to be important as stratigraphic indices in Upper Paleozoic.
- The(4)..... are defined as minute tooth-like and plate like microfossils.
- Among the globigerinids, the lower Cretaceous strata are characterized by appearance and dominance of families;(5) and(6)....
- The group(7).....of radiolarian is characterized by spherical central capsule with equally distributed perforations.
- Datum foraminiferal lines include the appearance of(8)... in the late Turonian, the appearance of(9)... near the Santonian/Campanian boundary and the extinction of(10)..... at the end of Maastrichtian.
- The large pore spaces of sands and gravels contain ...(11)... nutrients and therefore support(12)..... populations of foraminifera.
- The zone of light penetration in the oceans is called the(13).... zone.
- The level at which CaCO_3 solution equals CaCO_3 supply is called(14).....
- The basic shape of living radiolarian is(15).... with radiating filiform pseudopodia.

Question Two:

Answer the following statements with Yes or No and correct the false one. (15 Marks)

- 1-The Taxon zone defined as interval between 2 arbitrarily selected datum levels which may be based on first appearance, extinction, change of coiling direction, flood abundance of two selected taxa. ()
- 2-Total-Range (or Local- Range) zone defined by total or local range of one taxon. ()
- 3-The Acme zone is defined by exceptional abundance of one taxon. ()
- 4-The Textularids are considered as one of the most useful group of foraminifera for stratigraphic correlation through Upper Paleozoic strata. ()
- 5-The Upper Jurassic is marked by the dominance of Globotruncanidae and Heterohelicidae. ()
- 6-Low-diversity foraminiferid assemblages strongly suggest a wide range of food resources. ()
- 7-Reproduction of radiolarian is occur in an extracapsular plismatic region. ()
- 8-The deep water radiolarian possess more massive, heavier and coarser skeletons than the shallow water forms. ()
- 9-Conodonts are widely distributed in strata ranging in age from Early Ordovician to the Late Triassic. ()
- 10-The Paleogene is marked by dominance of the Globigerinidae, Globorotaliidae and Hantkeninidae. ()

II- Vertebrate Paleontology

IV- True or False:

(10 Marks)

- 1- The lower jaw of Cretaceous mammals was composed of several bones.
- 2- Devonian is the age of fishes.
- 3- Mammals dominated Pangea 250 million years ago.
- 4- *T. rex* is a meat eating dinosaurs that belongs to Ornithischian group .
- 5- Dinosaurs went extinct by the end of Cretaceous due to asteroid impact.
- 6- The jaws of vertebrates were evolved in the Jurassic period.
- 7- Cenozoic is the age of mammals.
- 8- *Anthrothere* is an ancestor of modern monkey and lived in Egypt during the Oligocene.
- 9- Many chordates, which include fish, gastropods, rays, and amphibians, are not amniotes.
- 10- The vertebrates are members of a larger Phylum termed Chordata.
- 11- Bahariya Formation is Jurassic in age and famous for dinosaurs.
- 12- The saurischia is bird-hipped dinosaurs
- 13- Sprawling is a posture of most dinosaurs.
- 14- *Paralititan* is a saurpodomorph dinosaur lived in Egypt 90 million years ago.
- 15- Synapsids are mammal-like reptiles lived during the end of Paleozoic.

V- Match the right answers

(10 Marks)

- | | |
|--------------------------|--|
| 1) Conodonts | A) Bony fishes, lobe finned fishes, gave rise to the tetrapods |
| 2) <i>Spinosaurus</i> | B) The first vertebrates to have paired pelvic fins and lived only during Devonian |
| 3) <i>Arsinoitherium</i> | C) The earliest vertebrates with hard tissues |
| 4) Placodermi | D) the earliest known tetrapods that lived about 360 million years ago. |
| 5) <i>Dorudon</i> | E) The largest meat eater dinosaur in the world. |
| 6) <i>Archaeopteryx</i> | F) The missing link between fishes and tetrapods |
| 7) <i>Tiktaalik</i> | G) A small whale lived in Wadi Hitan 40 million years ago |
| 8) <i>Mesosaurus</i> | H) A marine reptile that sometimes referred to in the popular media as dinosaurs, but this is incorrect |
| 9) <i>Eusthenopteron</i> | I) An animal with 4 horns (2 big horns in front and 2 small ones behind them) that lived during the Eocene- Oligocene age in Fayum area? |
| 10) <i>Acanthostega</i> | J) The oldest bird and the missing like between dinosaurs and birds |

VI-Choose the correct answer:

(10 Marks)

- 1- Vertebrates are all the animals with backbones such as
 - a) fishes, gastropods, reptiles, birds, and mammals
 - b) fishes, amphibians, reptiles, birds, and mammals
 - c) fishes, echinoderms, reptiles, birds, and mammals
- 2- Echinodermata is a group of
 - a) vertebrate animals
 - b) the closest invertebrate animals to vertebrates
 - c) sponges
- 3- Chondrichthyes are
 - a) jawless fishes
 - b) bony Fishes
 - c) cartilaginous fishes
- 4- The oldest fossil chordates known from
 - a) Egypt
 - b) China
 - c) Egypt
- 5- Tetrapodes evolved from
 - a) sarcopterygii fishes
 - b) actinopterygii fishes
 - c) agnatha fishes
- 6- The word Dinosaur means.....
 - a) terrible lizard
 - b) big crocodile
 - c) hungry reptile
- 7- The jaws of vertebrates were evolved from modified.....
 - a) anterior gill arches
 - b) anterior teeth
 - c) anterior fins
- 8- The Fayum Depression is well known for having.....
 - a- dinosaur fossils
 - b- mammal fossils
 - c- both
- 9- Theropods are dinosaurs
 - a) meat eating
 - b) plant eating
 - c) both
- 10- Turtle shell and most of Paleozoic fishes are
 - a) endoskeleton
 - b) exoskeleton
- 11- The first dinosaurs were
 - a) small bipeds
 - b) ate insects and small vertebrates
 - c) both
- 12- are warm blooded animals.
 - a) Birds and Mammals
 - b) Birds and Reptiles
 - c) Mammals and Reptiles
- 13- Conodonts have the stratigraphic range from.....
 - a) Devonian
 - b) Cambrian to Triassic
 - c) Devonian to Jurassic
- 14- become abundant only in the Cenozoic
 - a) Fishes
 - b) Early tetrapods
 - c) Mammals
- 15- The two clades of bony fishes are distinguished by the structure of their.....
 - a) fins
 - b) tails
 - c) heads
- 16- Amniotes are divided into three main groups based on.....
 - a) how many holes they have in the skull
 - b) how many eggs they lay
 - c) how many limbs they have
- 17- is a dinosaur that had a duck like beak.
 - a) Maiasuria
 - b) Brachiosaurus
 - c) Ankylosaurus
- 18- What kind of vertebrate fossils is Wadi Hitan famous for?
 - a) 40 million years old whale fossils
 - b) Dinosaurs
 - c) Paleocene mammals
- 19- Dinosaurs are characterized by
 - a) stand upright
 - b) have straight knee joint
 - c) both
- 20- is a ancient elephant lived in Fayum during Oligocene.
 - a) *Palaemastodon*
 - b) *Moeritherium*
 - c) both

المستوى الثالث - صولجيا - صولجيا حقلية ومساحة ج ٣٠٥



Mansoura University
Faculty of Science
Geology Department

Final Theoretical Exam
Second Term 2013

Date: 30 / 05 / 2013
Time Allowed: Two Hours
Full Mark: 60 Marks

نظام: -- الساعات المعتمدة
الفرقة: -- المستوى الثالث
الورقة الامتحانية: -- ج ٣٠٥
المقرر: -- جيولوجيا حقلية ومساحة
البرنامج: -- الجيولوجيا

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- Describe types of compass traverses.
- C- Mention types of contacts.
- D- Classify the enclaves.

2- Write briefly on the followings :--

- A- Methods of investigation and recording observations in the field.
- B- Mention the magnetic anomalies that affect on the compass.
- C- Collection of an oriented sample.
- D- Types of bedding.

3- Describe in detail the followings :--

- A- Way-up structures.
- B- Mention all uses of Brunton compass.
- C- Bearing from eye level.
- D- Measurement of vertical angle.

4- Write short notes on the followings :--

- A- Bearing from waist level.
- B- Measuring strike and dip for near and small outcrops.
- C- True thickness of different beds.
- D- Hand level method.

GOOD LUCK & BEST WISHES

لجنة التصحيح :- أ.د. محمد عابد - أ.د. أمين غيث - أ.د. عبد الحميد طه - د. شعبان مشعل*



Answer ALL the following questions

Question One

(15 marks)

Complete the missing parts

1. Coastlines are.....of.....models, representing the link between theand.....of the basin.
2. The applications of sequence stratigraphy range widely, from.....for.....,and....., to improved understanding of.....of local to global changes.
3. Time control may generally be achieved by means of....., or by the mapping of
4. The base level is.....during.....relative to its position during.....
5. The depositional sequence uses the.....and its.....as a composite sequence boundary whereas genetic stratigraphic sequence uses.....as a sequence boundary.
6. Fluvial sequences show overall.....that reflect.....in anenvironment. Sequence boundaries in fluvial successions are.....at the base of the.....
7. Four main events associated with changes in depositional trends are recorded during a complete cycle of base level shifts.....
8. Diastem is.....whereas conformity is.....
9. Basal surface of forced regression is used to define.....that accumulate in the.....environment during the.....of the.....
10. Subaerial unconformities may also be identified by the presence of.....that replace some of the original.....via processes of.....under subaerial conditions.

Question Two

(15 marks)

Compare between each pair of the following (illustrate with drawings if it is possible)

1. Tectonic setting of a retroarc foreland system and a divergent continental margin.
2. Forced regression and normal regression.
3. Lowstand systems tract and transgressive systems tract.
4. Paraconformity and disconformity.
5. Sequence stratigraphy and lithostratigraphy.
6. Type 1 and type 2 sequence boundary.
7. Second order and third order depositional sequences.

Question Three

(15 marks)

Tick (✓) or (X) and correct

1. Downstream-controlled fluvial systems are part of standard lowstand-transgressive-highstand systems tracts. ()
2. Biostratigraphic determinations may provide resolutions of 4, 8, and 10 Ma. ()
3. The actual distance between base level and sea level depends on rate of subsidence. ()
4. The genetic stratigraphic sequence is subdivided into highstand, lowstand, and transgressive systems tracts. ()
5. Sequence stratigraphy determines both process of sedimentary rock formation and correlation. ()
6. Paleosols have been described from an entire range of nonmarine settings. ()



7. Trace fossils are not sensitive to water energy, salinity, oxygen levels, and sedimentation rates. ()
8. End of transgression marks a change in the direction of shoreline shift from regression to transgression. ()
9. The highstand systems tract is bounded by the basal surface of marine regression at the base and by subaerial unconformity at the top. ()
10. The transgressive-regressive sequence is bounded by subaerial unconformities on the basin margin and the marine portion of maximum regressive surfaces farther seaward. ()

Question Four

(15 marks)

A) Write briefly on

1. Economic potential of highstand systems tract.
2. Genetic stratigraphic sequence.
3. Base level.
4. Maximum flooding surface.
5. Geological applications of pedology.

B) Do as shown

1. Why sequence stratigraphy is important in the prediction of facies?
2. What are the roles of eustatic control on sedimentation?
3. Define Walter's law.
4. How can you determine a sequence boundary?
5. Why sediment supply is a by-product of climate and tectonism?

With best wishes
Dr. Tarek Anan

د. طارق إبراهيم عنان

أ.د. عبد الله متولى شاهين

القائمون بالتصحيح:



Final Exam in Engineering Geology (G308) for Third Level Geology

Q1: Write short notes on each of the following:

(30 Marks)

- A. Disadvantages of dams (3 marks)
- B. Building design as an important area to consider in foundations systems (3 marks)
- C. Factors influencing choice of pile (3 marks)
- D. Standard penetration test (3 marks)
- E. Blowout preventers (3 marks)
- F. Advantages of cable tool drilling (3 marks)
- G. Buttress dams (3 marks)
- H. Armourstone (3 marks)
- I. Expansive soils (3 marks)
- J. Caisson foundation (3 marks)

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

- A. The rate of weathering is governed by the (1)....., texture, (2)....., climate and strength of the rock on the one hand, and the incidence of discontinuities within the rock mass on the other.
- B. Air core drilling is preferred over RAB drilling as it provides (3)....., but this method is (4)..... and (5)..... than RAB.
- C. (6)..... are piles that pass through layers of moderately- to poorly-compacted fill will be affected by negative skin friction.
- D. The ground mass can be defined as that (7)..... which will be influenced by, or will influence, the engineering work.
- 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. Strengths measured are uniaxial (or unconfined) tensile strength which is the stress at failure of a sample under (12).....
- H. The engineering geological matrix + changes produced by the engineering work= (13).....
- I. An important test for clayey soils is the (14)..... or consistency test. This examines the effect of changes of moisture content on the plasticity of clay soils.
- J. (15)....., device attached to the end of the drill string that breaks apart the rock being drilled. It contains jets through which the drilling fluid exits.
- K. A number of factors determine whether a rock will be worked as a building stone. These include: (16).....; (17).....; (18).....; and (19).....



- L. One of the most important parameters of road aggregate is the (20)....., which influences skid resistance.
- M. Stresses encountered in the ground may result from three causes: (21)....., (22)..... and (23).....
- N. Mudrocks containing significant amounts of disordered (24)..... tend to have moderate to high plasticity and therefore are easily workable.
- O. (25)..... often called mud pits, provides a reserve store of drilling fluid until it is required down the wellbore.
- P. Top drive suspended from (26)..... rotates drill string and drill bit.
- Q. The general objective of a site investigation is to assess the (27).....
- R. (28)..... is a generic term to describe the process of modifying an existing foundation by adding support.
- S. The lithological factors that govern the durability of mudrocks include the degree of induration, (29)....., the grain size distribution and the (30)....., especially the nature of the clay mineral fraction.

Q3: Differentiate between (support your answer with drawing if applicable)

(20 Marks)

- A. Primary and secondary creep. (4 marks)
- B. End bearing piles and friction piles (4 marks)
- C. Complex and ccrestone weathering. (4 marks)
- D. Gravity and embankment dams. (4 marks)
- E. Reverse circulation drilling and sonic drilling. (4 marks)

ALL THE BEST

Dr. Waleed Shukry El Diasty



Final Exam in Subsurface and Petroleum Geology (G309)

Answer the following questions

Q1. Write briefly on each of the following: (15 Marks)

- Oil shale. (3 Marks)
- Mud volcanoes and mud flows. (3 Marks)
- Regional correlation. (3 Marks)
- Conditions of genesis of hydrocarbon. (3 Marks)
- Functions of bacteria in oil formation. (3 Marks)

Q2. Complete the following: (15 Marks)

- Differences in the composition and properties of petroleum may be explained due to differences in the.....(4 marks)
- Evidences in support of oil migration are.....(3 Marks)
- Folds originate through.....and.....movements. Vertical movements are either due to.....or.....(4 Marks)
- Secondary stratigraphic traps produced due to.....or.....(4 Marks)

Q3. Write in detail on the primary stratigraphic traps. (15 Marks)

Q4. Give short notes on each of the following: (15 Marks)

- Information needed for subsurface evaluation. (4 Marks)
- Methods of correlation. (4 Marks)
- Facies. (3 Marks)
- Economic importance of subsurface geology. (4 Marks)

All the best