University of Baghdad
College of Science
Dept. of Geology

Time: 3hrs
2014-2015

Geophysics الأمتحان التنافسي
(Ph. D)

Q1- What is the similarity between gravity and magnetic methods in studying Geological structures?

Q2- What are the possible applications of Resistivity surveys?

Q3- Explain the objectives of seismic data interpretations?

Q4- Define "Density Contrast" and show its role in gravity interpretation?

Q5- Reflection Coefficient (RC) depends on:

a- gravitational acceleration, b- acoustic impedance, c- magnetic suscepitibility?.

Q6- Density Contrast ($\Delta\rho$) is:

a- $\rho1+\rho2$ b- $\rho1*\rho2$, c- $\rho1-\rho2$

Q7- Which represents the biggest resistivity

a- Fresh water b- The permafrost c- saltwater

Q8- The rock resistivity can vary with

a- The size of the grain b- The degree of sorting c. The porosity

Q9- What are the fundamental principles of the relative dating with illustration?

Q10- How does the chemical weathering perform?

BEST WISHES

University of Baghdad **Ph.D. Admission** Exam **2014-2015**

College of Science- Geology **Time : 3 hours**

Structural, Remote Sensing and Geomorphology

Q1: In tensile fracturing

a. No loss of cohesion across fracture surface takes place.
b. partial loss of cohesion across fracture surface take place.
c. complete loss of cohesion.
d. cohesion is not related to fracturing process.

Q2: Buckle folds result from

a. compressive stresses oriented at high angles to bedding planes.
b. compressive stresses oriented at low angles to parallel to bedding planes.
c. tensile stress field with the least normal stress parallel to bedding.
d. none of the above.

Q3: Fault propagation folds result from

a. movement of rock strata over curved fault surface.
b. folding of rock strata in front of ongoing faults.
c. breaking of faults through rock sequence.
d. none of the above.

Q4: The red sea is a good example of what type of plate boundary, Explain that with sketches.

Q.5: From the following words or phrases, choose the one that best complete the sentence.

A. The spectral signature of red bed outcrop in the false NIR-color composite image (of Landsat-Mss) is .... **a**-red **b**-cyan **c**-yellow

B. Dendritic drainage pattern is developed when rivers flow ----------

a. over a fairly uniform substance.
b. on the surface of a cone-shaped.
c. across parallel valleys.

Q6: Where there is abundant sand in dry region, the wind builds sand into

a- cliff b- playa c- Dune

Q7: Illustrate the spectral reflectance curves for water and soil in Near-Infrared and Visible bands.

Q8: What factors cause relief on the earth surface?

Q.9: What are the fundamental principles of the relative dating with illustration?

Q.10: How does chemical weathering perform?

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Admission Exam for PhD Petroleum Geology 2015

Q1- Crude oil is of; (Choose with reason)?

a- Amorphous organic matters, b- Prazinophyte algae, c- Soluble organic compounds, d- Macerals of Tasmanites.

Q2- Orogenic Belt Basin formed is of; (Choose with illustration)?

a- Converging Oceanic-Oceanic, b- Converging Continental-Continental, c- Converging Oceanic-Continental, d- Diverging boundary (Rifting)

Q3- Lower regional seal rocks in Iraq are; (Choose with description)?

a-Gotnia Anhydrites Formation, b- Mishrif Formation, c-Sargelu Formation, d- Fatha Formation?

Q4- Vertical secondary migrations are along; (Choose with example from Iraq)?

a- Fault, b- Bedding plane, c-Fractures, d-unconformity?

Q5- How do you use seismic section in order to evaluate migration pathways and accumulation site with example?

Q6- How does GC/MS instrument analyze crude oils?

Q7- Extracted organic matters used in; (Choose and give the reason)?

a- Organic matter richness of source rocks, b- maturation, c-biodegradation c- two of them.

Q8- How does mechanism of primary migration perform?

Q9- How does chemical weathering perform?

Q10- What are the fundamental principles of relative dating?

Good luck and all the best

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Geochemistry الأمتحان التنافسي
(Ph. D)

First MCQ:
Tick the appropriate answer:

2/12

Q.1: Ionic potential is:

(a) Charge on the ions.
(b) Charge multiplied by radius
(c) Charge divided by radius
(d) Radius divided by charge

Q.2: The stable isotope is:

(a) ^{32}S (b) ^{12}C (c) ^{238}U (d) ^{3}H

Q. 3: Calcite and aragonite are the example of:

(a) Polymorphism. (b) Isomorphism. (c) Diadochy. (d) None of-these.

Q. 4: The pH of solution is the:

(a) Hydrogen ion concentration of solution.
(b) Oxygen and hydrogen ion concentrations of solution.
(c) Minus log of Hydrogen ion concentration.
(d) Minus log of oxygen ion concentrations.

Q. 5: The mineral contained loss on ignition (LOI) as H_2O is:

(a) Gypsum (b) Calcite (c) Anhydrite (d) Kaolinite

Second) Essay:

Q.6: How do you manage the geochemical results in terms of precision and accuracy?

Q.7: Describe the chemical composition of the earth's crust in terms of rock and elements.

Q. 8: What are rare earth elements (REE); describe briefly the chemical behavior and their importance in the geochemical studies.

Q.9: What are the fundamental principles of the relative dating with illustration?

Q.10: How does chemical weathering perform?

BEST WISHES