
	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY		
	FINAL EXAMINATION FOR FOURTH LEVEL (CHEMISTRY/GEOLOGY)		
COURSE TITLE:	GEOLOGY OF EGYPT	COURSE CODE:	GE 4130
January, 2018	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED:	2 HOURS


ANSWER THE FOLLOWING QUESTIONS:

1. Write on the most important economic minerals and ore deposits that are present in the Phanerozoic succession of Egypt. (20 Marks)

2. Illustrate by drawing and brief description the lithostratigraphic succession of the Cretaceous rocks at the Bahariya Oasis, Western Desert, Egypt. (20 Marks)

3. Write Briefly on:
 - a) Oligocene facies and paleogeography. (20 Marks)
 - b) The Cretaceous/Tertiary contact at Esna area, Nile Valley. (20 Marks)
 - c) Paleozoic succession at Um Bogma area, West Central Sinai. (20 Marks)

EXAMINER	Prof. Abdel-Monem T. Abdel-Hameed
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Tanta University Faculty of Science Chemistry Department	Final Exam Chemistry of Petroleum		
	Level Four	Course Code: CH 4145	
		Total Assessment Marks: 50	
Double Major	Time allowed : 2 Hours	Date: 30/12/2017	

Answer the following questions:

1) Illustrate the inorganic theory which discusses the genesis of petroleum.
(10Marks)

2) Write short notes on the following: (10 Marks)

i- Pour point.

ii- sulfur compounds in petroleum.

iii- Kerosene zone in petroleum.

iv- Naphthenes or Cycloparaffins.

v- Aniline point.

3) Define each of the following with examples: (20 Marks)

i- Catalytic Cracking. ii- Alkylation. iii- Classification of Crude Oils

iv- Petrochemical from H_2S .

4) Show with equations how the following compounds could be prepared from petroleum and show its uses. (10 Marks)

1- Carbon black.

2- Adipic acid.

3- Teflon.

4- Ethylene glycol.

5- Hydrazine hydrate.

6- Acrylic acid.

7- Methyl methacrylate.

8- Ammonium nitrate fertilizer

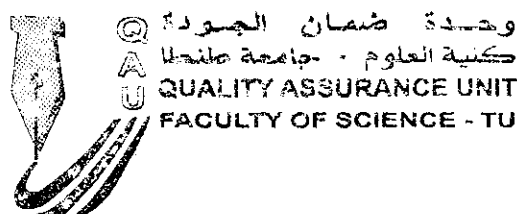
9- Phenolic Resins.


10- Nylon 6, 6.

..... **Good Luck**

Prof. Abd-elbaset shokr

Assistant.Prof. Seham Abd-elatif



	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR SENIOR STUDENTS (DOUBLE MAJORS)		
	COURSE TITLE:	INDUSTRIAL CHEMISTRY (CH4155)	TIME ALLOWED:
DATE: JANUARY 01, 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	2 HOURS

Question 1:

1) Compare between each pair of the followings: (9 Marks)

- a) Properties of diamond and graphite.
- b) Commodity and fine chemicals (with examples).
- c) SMR and POX.

2) Show with diagram only the extraction of sulfur. (2 Marks)

3) Write the uses of hypochlorous acid. (2 Marks)

Question 2:

1) Show only by equations: (8 Marks)

- a) Synthesis of diamond.
- b) Hydrogenation and oxidation steps for the manufacture of hydrogen peroxide.
- c) Ostwald process.
- d) Urea process for the synthesis of hydrazine.

2) Give reasons for the followings: (4 Marks)

- a) Addition of carbon and silica during the manufacture of white phosphorous.
- b) Addition of superheated water during the extraction of sulfur.

Question 3:

1) Give a brief account on the most common types of dyes with chemical structures of each kind. (4 Marks)

2) Compare in a short notes between: (4 Marks)


- a) Edible and inedible fats
- b) Saponification value and iodine number

Please turn over



Examiners: Prof. Ahmed Elbarbary
Dr. Mohamed Sadek

Prof. Nadia Elwakeel
Dr. Wael A. Amer

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY		
	EXAMINATION FOR FOURTH LEVEL STUDENTS		
COURSE TITLE:	PETROLEUM GEOLOGY -1		CODE NO. GE 4109
DATE:	JANUARY , 2018	FIRST TERM	TOTAL ASSESSMENT MARKS: 100 TIME : 2 HOURS

1- Give reasons on the followings : (30 marks)

- a) The Electron Spin Resonance technique is used for source rock evaluation.
- b) The rock textures affect the characters of porosity and permeability.
- c) Some reservoirs show minor oil occurrence.

2- Discuss the following subjects: (30 marks)

- a) Mechanical properties of oils.
- b) Porosity stimulation.

3- Compare between the followings : (10 marks)

- a) Asphalt and kerogen.
- b) Gasoline and diesel.
- c) Gas pool and oil field.

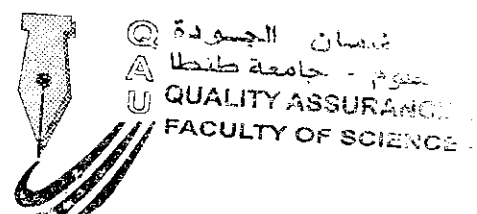
4- Complete the following : (10 marks)


- a) Petroleum is defined chemically as.....
- b) Chemical equation of biological fermentation is written as

5- Give an account on the followings. (20 marks)

- a) Classification of chemical reservoir rocks according to sedimentary textures.
- b) Factors affecting the characters of fragmental reservoir rocks.

EXAMINERS	PROF.DR. NADER ELGENDY	DR. SHADIA ABDELRAHEEM
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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY		
	FINAL EXAM FOR SPECIAL CHEMISTRY STUDENTS		
1999	COURSE TITLE: LASER CHEMISTRY		COURSE CODE: CH4113
DATE: 11 JANUARY 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	TIME: 2 HOURS

Answer the following questions:

- 1- Lasers have many advantages over traditional sources of electromagnetic radiations. Use concise schemes and/or drawings illustrating laser application in each of the following (14 marks):
 - (a) Synthesis of vinyl chloride starting from 1,2-dichloroethane.
 - (b) Isotope separation
 - (c) Modification of surfaces
 - (d) Laser welding of detached eye retina
 - (e) Laser capture microdissection (LCM)
 - (f) Laser lithotripsy to fragment calculi
 - (g) Single photon counting technique used in lifetime measurement.

- 2- The tunneling phenomenon is an important quantum-mechanical phenomenon. In the light of this phenomenon, answer the following (6 marks):
 - (a) Give the mathematical expression of the transmission probability $T(E)$.
 - (b) Explain the non-linear Arrhenius plots of aziridine inversion.
 - (c) The splitting of vibrational spectral lines in ammonia as a source of masers.

- 3- Draw and label each of the following (18 marks):
The modified Jablonskii diagram, the energy level diagrams in each of the following types of lasers: Excimer laser, semi-conductor solid state laser, He – Ne laser, CO₂ laser and proton transfer dye laser.


- 4- In thermal lensing technique (a) write equation of intensity change as a function of time, (b) draw the experimental setup of the apparatus, (c) draw the trace output and (e) draw a typical energy diagram for singlet oxygen sensitization showing the rate determining step in the sensitization process. (8 marks)

- 5- In no more than two lines, give the key reason(s) for each of the following: (4 marks):
 - i- Carbonyl compounds are common triplet sensitizers
 - ii- R6G-I⁻ is fluorescent in ethanol but non-fluorescent in CHCl₃.
 - iii- KI is usually added to Raman measurement samples.
 - iv- HClO₄ rather than HCl is usually used to adjust acidity in laser media

End of Exam

Examiners: Prof. Dr. El-Zeiny Mousa Ebeid and Prof. Dr. Samy Abdallah El- Daly



	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY		
	FINAL EXAMINATION for Level 4 (Chemistry- Geology) Students		
COURSE TITLE:	GEOCHEMISTRY	COURSE CODE: GE4105	
DATE:	JANUARY, 2018	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions: (Part I)

1-Complete the followings: (20 marks)

- 1- A-type granites characterize by SiO_2 and $\text{Na}_2\text{O} + \text{K}_2\text{O}$ with magma type and characterize by some index minerals such as..... and Setting
- 2-Geochemical classification of the elements based on,, and classified into,,
- 3-Chlorine, fluorine and water in the of crystallization with of complexity and increasing of substitution
- 4-Oceanic granites have magma type, characterize by high contents of and low contents of, They also formed as a
- 5-Uranium - thorium mineralization occurs in rocks as..... contains high amount of,,elements
- 6- The tholeiitic magma characterized by high amount of and low amount ofwhereas Calc-alkaline magma contains high amount of and low amounts of
- 7- Ni and Cr elements occurs in rocks such as, contains high amount ofelements
- 8-Normative composition of S-type granites should include,and..... and formed insetting due to and have magma type.
- 9-Volcanic arc granites have a magma type and originated in tectonic setting
- 10- Meteorites are classified into,, and similar to,, respectively.


2-Put \checkmark or \times marks and correct the wrong ones:- (10 marks)

- 1- Rhyolite in Cox et al. (1979) volcanic rock classification characterize by low SiO_2 and $\text{Na}_2\text{O} + \text{K}_2\text{O}$
- 2- The mantle are mainly formed from lithophile elements whereas the crust are mainly formed from chalcophile elements such as Ca and Li
- 3- Oceanic granite is A- type granites, mainly alkali feldspar granites, contains garnet and formed in island arc setting.

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GE 4117

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF GEOLOGY		
	EXAMINATION FOR SENIOR (LEVEL FOUR) STUDENTS OF CHEMISTRY-GEOLOGY		
	COURSE TITLE:	HYDROGEOLOGY 1	
DATE:	JAN, 2018	TERM: FIRST	TIME ALLOWED: 2 HOURS

Answer the following questions (Sketch maps and diagrams should be drawn whenever possible).

- 1- **Write short notes on the followings** (30 Marks)
 - a- Time-drawdown analysis (Jacob method) to determine transmissivity and storage coefficient of a water bearing formation.
 - b- Cone of depression and well interference.

- 2- **Write on the followings:** (20 Marks)
 - a- Hydrologic cycle and water budget
 - b- Drainage basins and its types.
 - c- Stream hydrograph and its applications.

- 3- **Compare between the followings:** (20 Minutes)
 - a- Groundwater flow system in case of isotropic and anisotropic aquifer and heterogeneous and homogeneous aquifers.
 - b- Gaining and losing streams.
 - c- Confined and unconfined aquifers
 - d- Storage coefficient in confined and unconfined aquifer

- 4- **Discuss Dracy's Law and how hydraulic conductivity, transmissivity and velocity could be derived.** (20 Minutes)

- 5- **What is the relationship between the followings:-** (10 Minutes)
 - a- Porosity and specific yields and specific retention.
 - b- Pressure head, Total head and elevation head
 - c- Head loss and hydraulic gradient.

EXAMINERS	PROF. DR. MOHAMED GAMAL ATWIA	PROF. DR. ZENHOM E. SALEM
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