



ARAB REPUBLIC OF EGYPT [٤٨] ث.ع / أول / ج

Ministry of Education

General Secondary Certificate Examination, ٢٠١٢

[For the First and Second Stages – First Session]

Geology & Environmental Sciences

Time: ٣ Hours

الجيولوجيا والعلوم البيئية [باللغة الإنجليزية]

تنبيه مهم : ١- يسلم الطالب ورقة امتحانية باللغة العربية مع الورقة المترجمة . [الأسئلة في أربع صفحات]
٢- الإجابات المكررة عن أسئلة الاختيار من متعدد و الصواب و الخطأ لن تقدر و يتم تقدير الإجابة الأولى فقط .

Answer only (FIVE) questions of the following:

First question:

[10 marks]

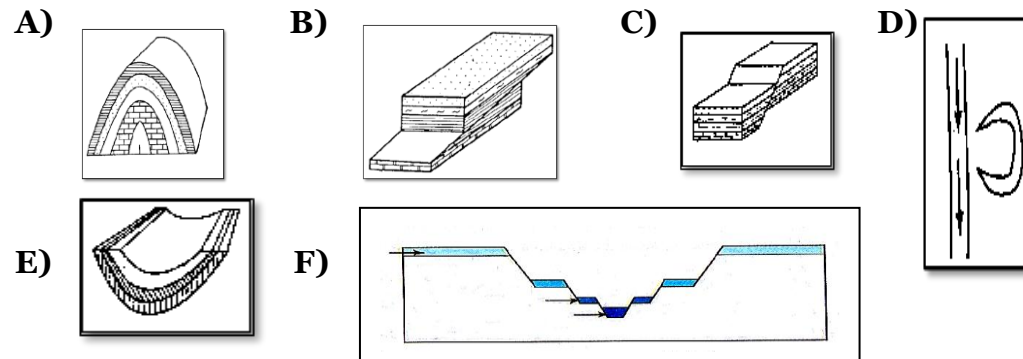
A) Select the correct answer for each of the following and then write it in your answer sheet:

- ١- Limestone is formed mostly of a single mineral named
a) halite b) calcite c) hematite d) gypsum
- ٢- Apatite can be used to scratch
a) quartz b) talc c) topaz d) diamond
- ٣- Benefit of the elements found in dead organisms is possible through organisms.
a) producer b) decomposer c) consumer d) parasitical
- ٤- Each of the following is considered as a method of treatment to stop the resources depletion problem with the exception of using
a) irrigation by using dripping b) solar energy
c) synthetic fibers d) chemical fertilizers

B) Compare between each pair of the following:

- ١- Deposits of saline water lakes and deposits of fresh water lakes.
- ٢- X-rays and Laser rays.

C) 1- Look at the given sketches and write the name of each sketch:



【 بقية الأسئلة في الصفحة الثانية 】

[٢]

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- ٢- "Natural cycles favour the continuity of life on the earth", in the concept of this statement, explain the nitrogen cycle in nature.

Second question:

[10 marks]

A) Write the scientific term for each of the following statements:

- ١- Hydrocarbon compound results from the incomplete combustion of thick and heavy oil components which is found in coal tar, smoke of cigarettes, and it causes cancer.
- ٢- A science deals with all operations which permit to gain information on something, that has no direct contact between it and the system which gets such information.
- ٣- The relation between the light period which the plant is subjected to the period of darkness that follows sequentially every 24 hours.
- ٤- The plane which divides the fold into two equal and identical parts.

B) 1- Mention four evidences indicating the occurrence of earth's movements.

2- What are the biological contents and lithologic characteristics of Triassic Period?

C) What happens in the following cases... ?

- 1- Depletion of nitrate salts and phosphate salts in the surface water of the seas.
- 2- Increasing of temperature in the surrounding medium of molluscs and insects.

Third question:

[10 marks]

A) Rewrite the following statements after correcting the underlined words:

- 1- Formation of caves in limestones is considered a feature for **aggradation action of ground water**.
- 2- **Cretaceous period** is characterized by numerous species of cephalopods.
- ٣- **Charles Lyll** was the first scientist who related between the three kinds of rocks in one cycle known as the rock cycle.
- ٤- Increasing of concentration of **sulphur oxides** in the atmosphere leads to the global warming phenomenon.

B) 1- Mention the textural characteristics for the plutonic igneous rocks and the intrusive igneous rocks.

2- Explain how sand dunes are formed.

3- What are the roles of geologic studies in searching for the building materials?

C) 1- What are the affecting factors for flourishing the agricultural production?

2- Illustrate the effects of pesticides on human health.

【 بقية الأسئلة في الصفحة الثالثة 】

Fourth question:

[10 marks]

A) Justify each of the following:

- ١- Increasing salinity degree in the Red Sea and the Arabian Gulf.
- ٢- Petroleum is not only a source for energy.
- ٣- The oceanic crust is continuously renewable.
- ٤- Reasons for nomenclature Phanerozoic Eon with this name.

B) Clarify the differences between each pair of the following:

- ١- Temporary vegetation and permanent vegetation.
- ٢- Sandstone and mudstone.
- ٣- Primary treatment and secondary treatment of sewage water.

C) 1- What is meant by Kerogen?

- 2- Write on the remote sensing steps.

Fifth question:

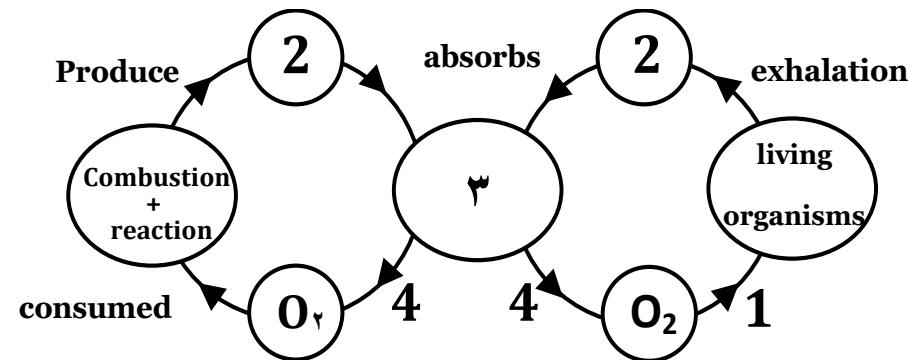
[10 marks]

A) According to your study of minerals and rocks, assign the mineral name or rock name that is characterized by the following properties:

- ١- A mineral disperses the incident light ray into red and violet colours.
- ٢- Chemical sedimentary rock which chemical composition is hydrous calcium sulphate.
- ٣- A volcanic igneous rock equivalent to granite, rich in cavities and is used in domestic purposes.
- ٤- A metamorphic rock shows foliation due to the parallel arrangement of mica crystals in one direction.

B) 1- "Deposition in seas happens at different depths, each depth has its characteristic sediments ". Mention the zones of deposition (without explanation) and define the zone in which spits are formed.

- 2- Write the label for each number in the given sketches:



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C) Choose the correct sentence from (B) to match with those of (A) and then write the complete phrase:

| (A) | (B) |
|--|---|
| ١- Decreasing of living organisms in environment | a) possibly overcome by recycling b) caused due to deformation of beauty of nature and neglecting cleanliness. c) contain the poison of some germs or the germs themselves. |
| ٢- Chemical weapons | d) is the result of nearby several TV and radio stations and the high pressure cables. |
| ٣- Depletion of minerals | e) leads to disturbance of ecosystem. |
| ٤- Eyesight pollution | f) substances or compounds that cause harm or death to those who touch them or inhale them. |

Sixth question:

[10 marks]

A) What are the results of each of the following?

- ١- Ascending of the highly viscous magma through a narrow opening in the rock beds.
- ٢- Drying of lakes and erecting dams to control the river water, as happened in Delta and the Upper Nile.
- ٣- The regular grazing in the trees and shrubs areas.
- ٤- The continuous use of the upper layer of soil (mud) in making bricks.

B) 1- Show how we can make use of Maghara coal mine.

- 2- Arrange the following Epochs and Periods from the youngest to the oldest; (Paleocene - Ordovician - Miocene - Permian).
- 3- Why is the streak of the mineral considered a characteristic property for identification of minerals?

C) "Earthquakes cause severe destruction to the villages and cities in diversified areas of the world ".

- ١- Mention two types of earthquakes and the cause of each type.
- ٢- What are the pollutants that cause deficiency in the quantity of dissolved oxygen in water?