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رُوجع على النص العربي ومطابق الأصل البيوى ويطلع على مسئولية اللجنة الفنية ،

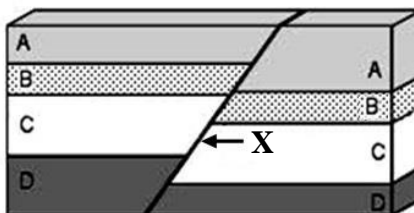
[E.N / 15] [3] تابع [٥٣ / ج] ث.ع / أ / ح

(B) What would happen in each of the following cases?

- 1 - Occurrence of a big change in some factors within the ecosystem.
- 2 - Disappearance of saprophytic bacteria from the ecosystem.
- 3 - When the temperature becomes slightly unsuitable in the medium where the organism lives.
- 4 - Changing water level of the river during flood.

(C)

- 1 - How can sand dunes be formed? What are their types?
- 2 - **The opposite figure illustrates a fault, answer the following questions:**
 - a) What is the type of the fault shown in the figure? Why?
 - b) Which is the oldest, deposition of layer (B) or occurrence of the fault?
 - c) What is the significance of what letter "X" indicates?



Fourth question: [15 marks]

(A) Write the scientific term indicated by each of the following statements:

- 1 - Sharp edged rock fragments produced from breaking of volcanic neck materials during eruption of the volcano.
- 2 - A plutonic rock rich in iron, calcium and magnesium silicates.
- 3 - All establishments formed by man to administer the internal relations among members of society.
- 4 - The space where life exists and extends between the largest depth in the seas and the highest elevation in mountains.
- 5 - Earthquakes have their foci as deep as 500 km from Earth's surface.

(B)

- 1 - **Explain each statement of the following:**
 - a) Marine environment of the seas and oceans is a relatively stable environment as compared to the terrestrial environments.
 - b) The colour property is less important in identification of minerals.
 - c) Researches are carried to develop phytoplankton and zooplankton.
 - d) Presence of kaolin near to the granitic igneous rocks.
- 2 - Illustrate by drawing **only** the difference between laccolith and lopolith.

(C)

- 1 - **What are the names of the following rocks and minerals?**
 - a) A volcanic rock composed of silica (55% - 59%) and varying amounts of iron, calcium and sodium.
 - b) A microcrystalline igneous rock rich in orthoclase feldspar, quartz and black mica.
 - c) A lithified rock composed of consolidated grains ranging from 2 mm to 62 microns.
 - d) A mineral composes of one element with a basal cleavage.
 - e) A rock had been used by Paleolithic man to make spears to defend himself.

[بقية الأسئلة فى الصفحة الرابعة]

[E.N / 15] [4] تابع [٥٣ / ج] ث.ع / أ / ح

2 - Write briefly about each of the following:

- a) Determination of the epicenter point of the earthquake.
- b) The temporary vegetation in the desert ecosystem.

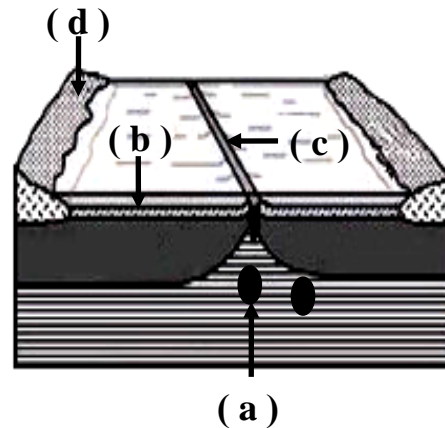
Fifth question: [15 marks]

(A) What are the consequent results of each of the following...?

- 1 - Reduction in evaporation and increasing the number of rivers in Baltic Sea.
- 2 - Occurrence of volcanic eruptions under water surface in the seas.
- 3 - The change of the environment in the Delta and Upper Nile.
- 4 - Using of synthetic fibers instead of cotton in the manufacture of some textiles.
- 5 - Scratching two pieces, one of orthoclase mineral and the other of apatite mineral.

(B)

- 1 - **Observe the opposite figure, then answer the following questions:**
 - a) What does the figure represent?
 - b) **Determine the letter that represents each of the following:**
 - Mid ocean ridge
 - Continental crust
 - Ocean crust
 - Magma
- 2 - **Mention one example for each of the following:**
 - a) A volcano continues in eruption.
 - b) A radioactive mineral of delta deposits.
 - c) A glassy equivalent to granite.
 - d) Deposits of chemical origin.
 - e) A geological structure exists in tombs of Ancient Egyptians.



(C)

- 1 - **Define each of the following:**
 - a) The streak.
 - b) The plant photoperiodism.
 - c) The natural reservation.
- 2 - " There are several types of rocks in nature such as **limestone** and **granite** ". **Answer the following questions:**
 - a) What is the type of each of the two previous rocks?
 - b) How can we obtain two metamorphic rocks from the previous rocks?

[انتهت الأسئلة]

الدرجة العظمى (٦٠)
الدرجة الصغرى (٣٠)
عدد الصفحات (٥)

جمهورية مصر العربية
وزارة التربية والتعليم
امتحان شهادة إتمام الدراسة الثانوية العامة
لعام ٢٠١٥ م
نموذج إجابة [الجيولوجيا والعوم البيئية بالانجليزية]

[٥٣]
الدور الأول
(نظام حديث)

Answer of first question: (5 + 6 + 4 = 15 marks)

(A) (1 × 5 = 5 marks)

- 1- (b) irrigation by dripping 2E70
- 2- (d) concoidal 3G78
- 3- (b) the faults 1G13
- 4- (c) Extraction of water from succulent plants 1E35
- 5- (c) evolution 2E59

(B) (2 × 3 = 6 marks)

1- The continental shelf	The continental slope
The sediments are gravel and sand near the shore, changing to silt and clay seawards. Calcareous shells are common in this zone. (One mark) 2G55-56	The sediments are represented by mud with very little fine materials and calcareous and siliceous materials of floating organisms that settle to the bottom after death as foraminifera. (One mark) 2G56
2- The oil shale	The laminated mud
Muddy sediment rich in organic remains (hydrocarbon) mostly of algal origin. the organic material has a waxy nature and is known as kerogen which decomposes into oil on heating to 480 ° C. (One mark) 4G95	When mud becomes consolidated it acquires lamination and fissility as a result of compaction of its grains. (One mark) 4G94
3- The organic fertilizers	The chemical fertilizers
Activate living organisms in the soil and enter into the food chain thus giving the soil desirable physical characteristics. (One mark) 2E47	Lead to the deterioration of the soil and make it more liable to erosion. 2E47 (One mark)

(C) - (2 + 1 + 1 = 4 marks) 5G115

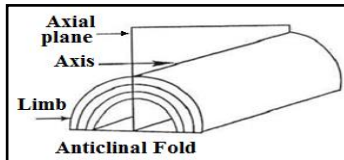
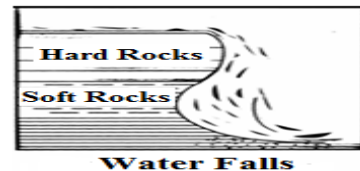
- 1 - Rock number 3: is Sial. Sial is rich in silica (about 70 %) and alumina and forming continents. (One mark) 5G119
- Rock number 4: is Sima. Sima is rich in silica (about 45 %) and magnesium and builds up ocean floor and occurs under continents at great depths. (One mark) 5G119
- 2- The effect of erosion factors: In area (1) disintegration of rocks takes place In area (2) deposition process takes place. (One mark) 5G115
- 3- The result of the effect of different erosion factors: Area No. 5 has become a high pressure area after the deposition and the area number (6) has become a slight pressure area after erosion. (One mark) 5G115

Answer of second question: (5 + 5 + 5 = 15 marks)**(A) (1 × 5 = 5 marks)**

- 1- Because quartz crystallizes at the last stage of the rosy magma crystallization while basalt crystallizes at the early stage of magma crystallization. 4G100
- 2- Due to flourishing of the vegetative cover under warm, humid and organic rich conditions during the Carboniferous period. These resulted in accumulation of huge trees buried deep enough and gave rise to coal seams of various qualities. 5G112
- 3- Due to the increase of population growth and the deterioration of the plant vegetation by overgrazing which leads to the action of erosion factors and soil erosion. 1E37
- 4- Due to the failure of the dinosaurs and huge reptiles to compete with others and due to the occurrence of climate changes harmful to the environment and vegetation. 2E58
- 5- As a result of the impact of climatic and environmental conditions such as effects of drought, heat, wind and water currents on sedimentary rocks and without any interaction mentioned by tectonic forces. 1G16

(B) (2 + 3 = 5 marks)**1- (2 × 1 = 2 marks)**

- a) **The intensity of the earthquake:** A specific measure of the damage caused by an earthquake beside the reaction of people to it. 5G130
- b) **The internal structure of the mineral:** Arrangement the atoms of the mineral constituent in repeated positions at equal distances, elements and interdependence among the regularly geometrical arrangement reflects itself in the outer faces of the crystal, which its distribution is organized in a symmetrical manner. 3G69

2- (2 + 1 = 3 marks)**a) (2 marks) 1G12****b) (One mark) 2G44****(C) (3 + 1 + 1 = 5 marks)**

- 1- Sun light has a pronounced effect on the activity of animals. This activity can be divided as the following: 1E20-21
 - In the night period, the night animals become active and in the dawn period, the activity of the night animals is reduced gradually, then the animals go to their homes. **(One mark)**
 - In the day period, the day animals become active and in the sunset period, the activity of the day animals is reduced gradually, then the animals go to their homes. **(One mark)**
 - Moon light has pronounced effect on animals living on the sea shores which are exposed to the tide. Some of the animals become active when they submerged by the flow tide and remain inactive when the tide water is ebb tide. **(One mark)**
- 2- A cubic crystal form is equant because it grows equally along the three directions and contains largest elements of symmetry and its axes in the three directions are equal in length at right angles. **(One mark) 3G71**
- 3- The set of grooves in Sinai Peninsula are due to the mechanical effect of rain where rains accompanied by strong wind help in carving and eroding limestone rocks. **(One mark) 2G41**

Answer of third question: (6 + 4 + 5 = 15 marks)**(A) (1 × 6 = 6 marks)**

- 1- Abyssal zone. 2G56
- 2- Sodium and magnesium carbonates. 2G57
- 3- Youth stage. 2G45
- 4- 30°C. 1E26
- 5- Organic matter. 2G58
- 6- North Sinai. 2E64

(B) (1 × 4 = 4 marks)

- 1- Lead to disturbance of present ecosystem balance and the beginning of a new balance after this change. 1E25
- 2- Without these organisms, the dead organisms will remain without decomposition and the elements of carbon, phosphorus, nitrogen and other elements will stay in these dead bodies and will not be available for new organisms, there is no what ensures the continuity of life in the ecosystem. 1E15
- 3- The living organism goes to a period of dormancy where the biological activities of all the body systems stop except those necessary for the survival of the animal alive. 1E22-23
- 4- This leads to the formation of river terraces deposits on both sides of the river. 2G48

(C) (2.5 + 2.5 = 5 marks)**1- (2.5 marks) 2G39-40**

When wind carrying sand faces an obstacle which obstructs its free movements, the transporting power of wind decreases. It will not be able to carry the sand grains for a longer distance and will deposit its load in the form of sand dunes. **(One mark)**

Types of sand dunes are:

- Longitudinal dunes **(0.5 mark)**
- Barchans dunes **(0.5 mark)**
- Coastal dunes **(0.5 mark)**

2- (2.5 marks) 1G14-15

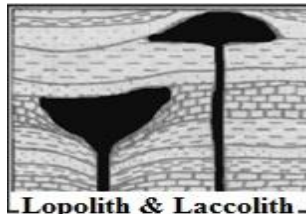
- a) The type of fault: reverse fault **(0.5 mark)** – The reason is: the hanging wall rocks moved up with respect to the foot wall. **(0.5 mark)**
- b) Deposition of layer (B) is older than the occurrence of the fault. **(0.5 mark)**
- c) The significance of fault plane is: **(One mark)**
 - Mineral ores as manganese, copper and zinc may be found along fault plane.
 - Hot springs and water find their way along fault plane.

Answer of fourth question: (5 + 5 + 5 = 15 marks)**(A) (1 × 5 = 5 marks)**

- | | |
|-------------------------|-------|
| 1- Volcanic Breccia | 1G19 |
| 2- Gabbro | 4G100 |
| 3- The Sociosphere | 1E37 |
| 4- The Biosphere | 1E12 |
| 5- Plutonic earthquakes | 5G128 |

(B) (4 + 1 = 5 marks)**1- (1 × 4 = 4 marks)**

- a) Due to the continuity of the water of the seas and oceans, while the terrestrial environments are separated into continents and far away islands, so they are vary in physical, chemical and biological conditions. 1E25
- b) Because the colours of the majority of minerals may be changed depending on the chemical composition or if the mineral contains a small amount of impurities. 3G74
- c) In order to make good use of the productivity power of the seas, we should depend on the first trophic level in the food chain (which occupied by phytoplankton and zooplankton) and not on the next or the last trophic level where as the energy decreases from trophic level to the other to be about one tenth. Thus researches are going on to develop phytoplankton and zooplankton and harvesting them and using it as food for man and his herds due to its availability and rapid growth. 1E31
- d) Because kaolin produced by the chemical weathering of potassium feldspar (orthoclase) mineral found in granite rock. 2G35
- 2- (Drawing: One mark) 1G18

**(C) (2.5 + 2.5 = 5 marks)****1- (0.5 × 5 = 2.5 marks)**

- | | | | |
|--------------|-------|-------------|-------|
| a) Andesite | 4G100 | b) Rhyolits | 4G100 |
| c) Sandstone | 4G93 | d) Graphite | 3G78 |
| e) Chert | 3G68 | | |

2- (1.5 + 1 = 2.5 marks)

- a) Determination of the location of epicenter : By cooperation between three stations, each one determine the relative time of the arrival of the three types of waves to calculate the distance between epicenter and station and by drawing three circles on a map, each station represents the center of a circle. The point of intersection of these circles is the epicenter point. (1.5 marks) 5G129
- b) Temporary vegetation: It is in the form of annual plants that appear only in winter after rainfall and withers away by arrival of drought in summer. They disappear after leaving their seeds in the soil. Thus these are normal plant, not specialized for desert life and their presence depends on the presence of water in the soil. (One mark) 1E33

Answer of fifth question: (5 + 5 + 5 = 15 marks)**(A) (1 × 5 = 5 marks)**

- 1- Salt concentration decreases in Baltic Sea to reach 20 gm / liter. 1E26
- 2- Formation of new volcanic islands. 4G102
- 3- Disappearance of papyrus plants and the ibis bird. 2E79
- 4- Saving larger agricultural areas for planting wheat. 2E75
- 5- Orthoclase mineral scratches apatite mineral where the hardness of orthoclase mineral is greater than the hardness of apatite mineral. 3G76

(B) (2.5 + 2.5 = 5 marks)**1- (0.5 × 5 = 2.5 marks)**

- a) Plates Tectonic Movement. 5G126
- b)
 - Mid ocean ridge (c)
 - Continental crust (d)
 - Ocean crust (b)
 - Magma (a)

2- (0.5 × 5 = 2.5 marks)

- a) Stromboli volcano in Italy 4G102
- b) Monazite 2G50
- c) Obsidian 4G100
- d) Table salt and gypsum 4G94
- e) Joints 1G16

(C) (3 + 2 = 5 marks)**1- (1 × 3 = 3 marks)**

- a) The streak: Is the colour of the powder of the mineral as seen on a streak plate made of unglazed porcelain. 3G75
- b) The plant photoperiodism: Is the relation between the light period the plant is subjected to and the period of darkness that follows it sequentially every 24 hours. 1E19
- c) The natural reservation: Is a central area encircled with an insulation area for protection against weather and man activities. 2E63

2- 2marks

- a) Limestone: is a sedimentary rock. (0.5 mark)
Granite: is a plutonic igneous rock . (0.5 mark)
- b) By increasing temperature limestone turns into marble (a metamorphic rock) (0.5 mark)
By increasing pressure and temperature granite turns into gneiss. (a metamorphic rock) (0.5 mark)

انتهى نموذج الإجابة