جامعة اسيوط
كلية العلوم- قسم الجيولوجيا

الزمن ساعتان

امتحان مقرر عمليات تكوين الخامات (٤٣٨ج)
للمستوى الرابع (شعبة كيمياء - جيولوجيا)

الفصل الصيفى العام الجامعى ٢٠٢١ - ٢٠٢٢

Answer the following questions (50 M)

ظلل الاجابة (T) إذا كانت الاجابة صحيحة او (F) إذا كانت الاجابة خاطئة (درجتان لكل سؤال)

1. Some hydrothermal solutions are formed from rainwater or seawater that circulates deep in the crust.
2. For copper, it is easy to recover the oxide section, which can easily be leached using sulphuric acid than the sulphides.
3. Volcanogenic massive sulfide deposits are poor in copper and zinc.
4. Borax and other boron-containing minerals are mined from evaporite lake deposits.
5. Many famous ore bodies are associated with intrusive igneous rocks.
6. In black smokers, the rising hydrothermal fluid appears black due to fine particles of iron sulfide and other minerals precipitated from solution as the plume is cooled by contact with cold seawater.
7. Leaching of silica from the banded iron formation during weathering can lead to decreasing Fe percent.
8. The dense chromite crystals settle to the bottom of the magma, producing almost pure layers of chromite
9. Metamorphism of the Lake Superior-type iron can decrease the grade of the ore.
10. Stratabound deposits form when a magma invades and reacts with muddy sediment.
11. Most industrial minerals are of low volume.
12. Evaluation of ore deposits depends on market location, transportation costs, their physical and chemical characteristics, and the degree of processing required for end use.
13. Ore within the weathered cap is called 'gossan.
14. Mineralogy dose not changed within an ore body and hence during the life of a mine.
15. Mineral deposits formed from midocean ridge volcanism are called volcanogenic massive sulfide deposits.
16. Ore type often changed from a hematite to magnetite during weathering.
17. "Mineral deposit" is an economic term, whereas "Ore" is a geologic term.
18. Most stratabound deposits are diagenetic in origin
19. Galena, chalcopyrite and sphalerite are ore minerals from which zinc, lead, and copper respectively can be extracted.

20. Veins type deposits are formed when hydrothermal solutions deposited minerals in open fractures.
21. Mineral deposits are concentrated by hot, aqueous solutions flowing through fractures and pore spaces in crustal rock to form magmatic mineral deposits.
22. Disseminated type ore deposit has often a 'cap' of weathered sulphides (hence oxides) on the top of ore body.
23. Many mineral deposits in the form of veins are found in regions of volcanic activity.
24. For gold mining, the gossan is mined because it is more easily accessible and naturally enriched and is easier to recover.
25. Mineral deposits are concentrated by flowing surface water in streams or along the shore, to form residual mineral deposits.

الجزء الشفوى(10 M)

26. Most placers deposits have low specific gravity minerals.
27. Type of ore body has a big influence on the choice of mining method.
28. A few metallic ores such as chromite, alumina, and pyrolusite, when used for certain purposes such as refractories in high temperature furnaces may be classified as industrial minerals
29. Much of the world's lithium is mined from pegmatites
30. Iron ores formed as a result of metamorphism are called taconites, and they are now the main kind of ore mined in Lake Superior region.

تمت الاسئلة وبالتوفيق

أ.د. جلال الحباك

Assiut University **Faculty of Science** **Geology Department**

Final Exam in Geology of Egypt (415G), Summer Semester

Time: 3 Hours **50 Marks** **2021/2022**

Part 1 (Precambrian)

Answer the following questions:

Question (1)

Display an explanation for the development of the basement complex in the Arabian Nubian Shield. **(10 marks)**

Question (2)

Outline briefly the ophiolite sequence in the Egyptian basement, and display the main mechanism given for its formation. **(10 marks)**

Question (3)

Briefly compare between the Island arc volcanics and Magmatic arc volcanics. **(5 marks)**

Part 2 (Panerozoic)

Choose the correct answer: **(5 marks)**

1- The ..... rock unit (s) is/are of the Eocene age at Fayum region.

a) Dongoul b) Minia c) Darat d) all of these

2- The Oligocene sedimentary rocks in the Nile Delta and Gulf of Suez are similar in the occurrence of ..... rocks.

a) marine b) galcial c) aeolian d) playa

3- The stratigraphic arrangement of the Pliocene rock units in Red Sea region are .....

a) Sameh, Gaber, Shagra
b) Gaber, Shagra ,Sameh
c) Shagra, Gaber, Sameh
d) Sameh, Shagra, Gaber

4- The Carboniferous sedimentary rocks in the Gelf Kibeer differ from those in the Sinai in containing ..... rocks.

a) fluvial b) galcial c) marine d) aeolian

5- During which geologic time did the Roestta Formation form?

a) Miocene b) Pliocene c) Oligocene d) Pleistocene

Question (4) **(10 marks)**

1- Select from **list B** the equivalent rock units to those of **list A** and re-arrange the units of list A in ascending order according to the age.

List A	List B
Garra	Dakhla
Kiseiba	Esna
Kafr El Shaikh	Baharia
Belayim	Wadi Natrun
Kurkur	Umm Mahara
Bahrien	Sudr
Khoman	Tarawan
Maghrabi	Sidi Salem
	Masajid

2- Explain the relationship between the Cenomanian sedimentary rocks in the Northern and Southern Sinai, illustrate your answer by drawing.

Question (5) **(10 marks)**

1- In a stratigraphic table compare and correlate the Eocene-Oligocene rock units and their equivalent time units in the Nile Valley, Fayum and Sinai.

2- Write an essay on the Triassic rocks in Egypt.

3- Arrange in a stratigraphic column the subsurface Paleozoic rock units in the Western Desert.

========== **Good Luck**==========

Prof. Dr. Ali Khudeir **Prof. Dr. Nageh A. Obaidalla**

Assiut University
Faculty of Science
Geology Department

Credit hour system - summer semester
Geology Program
Economic Geology (G 434)

Fourth Level **(2021 – 2022)** **Allowed time 2 hour**

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ملحوظـة: الامتـحان فى اربع صفحات

الجزء التحريـرى (50 M)

ظلل الاجابة الصحيحة **(درجتان لكل سؤال)**

1. **Pegmatites are:**
   a. Very fine-grained crystals
   b. Poor in gem stones
   c. Poor in rare earth elements (REE)
   d. Associated mainly with granitic intrusions
2. **The most suitable rock type for the formation of skarns is:**
   a. Siliciclastic rocks
   b. Calcareous (e.g., limestone, dolostone) rocks
   c. Massive rocks
   d. Gneisses
3. **Diamond-bearing pipes associated with mica peridotite and formed at great depths (200 km):**
   a. Kimberlite
   b. Volcanogenic massive sulfide
   c. Meteoric water dominated hydrothermal
   d. Mississippi Valley Type (MVT) deposits
4. **Limited regions of the crust within which mineral deposits occur in unusually large numbers:**
   a. Metallogenic Provinces
   b. Mafic association
   c. Craton
   d. East African
5. **Geochemical traps mean:**
   a. Distribution of elements in the crust
   b. Metals (as ions) that transported and precipitated in a very concentrated fashion
   c. Cause metals to go from insoluble to soluble form
   d. Fossil Fuels
6. **Skarn deposits mean:**
   a. Acidic fluids from a granitic pluton invade and react with limestones
   b. Secondary Enrichment
   c. Hot water associated with contact metamorphisms
   d. (a &c)

7. **late staged crystallization from magma and concentrated with many residual elements (e.g. Li, Ce, Be, Sn, and U) are:**
    a. Pegmatites
    b. Exhalatives
    c. Laterites
    d. Cumulate deposits
8. **Asbestos are characterized by:**
    a. Heat resistance
    b. Electrical resistance
    c. Chemical resistance
    d. All of the above
9. **The most important magmatic deposits are restricted to:**
    a. Mafic and ultramafic rocks
    b. Acidic rocks
    c. Intermediate volcanic rocks
    d. Porphyritic rocks
10. **Airborne asbestos fibers inhaled deep into the lung can cause:**
    a. Damage to respiratory system
    b. Body's defense mechanisms can break down the fibers
    c. Diarrhea
    d. Nothing
11. **Banded iron formations are:**
    a. Associated with halite and gypsum
    b. Precipitated by biochemical reactions in a low-oxygen atmosphere during the Precambrian
    c. Restricted to the Phanerozoic
    d. Crystallize from a magma body
12. **Residual mineral deposits formed in tropical climates:**
    a. Bauxite
    b. Gold nuggets
    c. Silver nuggets
    d. Platinum nuggets
13. **Manganese nodules are formed by:**
    a. Evaporation and precipitation
    b. Mechanical concentration
    c. Direct precipitation from seawater
    d. Contact metamorphism
14. **Laterites are mined for:**
    a. Cupper
    b. Phosphate
    c. Salts
    d. Iron and sometimes nickel
15. **Placers are commonly deposited in:**
    a. Along beaches and behind undulations on the ocean floor
    b. Above waterfalls
    c. In point bars outside meander loops

d. Upstream from a tributary

16. Hydrothermal fluids invade and react with muddy sediments forming Layers of pyrite, sphalerite and galena parallel to the layering of host rock:

a. Epigenetic deposits
b. Stratabound deposits
c. Nonmetallic minerals
d. Residual mineral deposits

17. The naturally occurring material from which a mineral can be profitably extracted:

a. Ore
b. Mineral deposit
c. Porphyries
d. Gangues

18. Metallic minerals settle to form layers in the magma chamber:

a. Chromium
b. PGE
c. Hematite
d. (a& b)

19. Pegmatites are:

a. Crystallized from volatile rich fluids
b. Very coarse grained crystals (e.g., feldspar)
c. Enriched in Gem stones, rare earth elements (REE)
d. All of the above

20. Volcanogenic massive sulfide (VMS) deposits (Cu-Zn) are:

a. Associated with mid-ocean ridge volcanism
b. Associated with plutonic, intermediate igneous rocks
c. Forming today in the Red Sea
d. Formed at the Early magmatic stage

21. Porphyry Cu, Mo deposits are:

a. Associated with mid-ocean ridge volcanism
b. Associated with plutonic, intermediate igneous rocks
c. Well known at Bushveld Complex, South Africa
d. Formed by metamorphic - dehydration reactions

22. Epithermal Au-Ag deposits are formed through:

a. Meteoric water dominated hydrothermal systems
b. Secondary enrichment
c. Partial melting
d. Fractional crystallization

23. Tin and tungsten deposits are commonly (as in Malaysia, Bolivia, Cornwall-England) associated with:

a. Ultrabasic rocks
b. Basic rocks
c. Felsic rocks
d. Intermediate rocks

24. The most common ore deposit associated with placer deposits is:

a. Pyrite
b. Chalcopyrite
c. Gold
d. Bauxite

25. The total amount of metal that can be extracted from any particular ore deposit refers to:

a. Tonnage
b. Tenor
c. Grade
d. Average

الجزء الشفوى (10 M)

26. A mineral deposit formed at the same time as the enclosing rock:

a. Syngeneic
b. Epigenetic
c. Gangue
d. Diagenetic

27. Gypsum, phosphate, halite are:

a. Metallic mineral deposits
b. Non-metallic mineral deposits
c. Industrial minerals
d. b &c

28. Hydrothermal deposits are typically form:

a. Veins
b. Replacements
c. Disseminations
d. All of them

29. Resource that can be extracted profitably at current market conditions and levels of technology is known as:

a. Grade
b. Reserve
c. Tenor
d. Tonnage

30. Sulfide-rich liquid found in the silicate magma is:

a. Homogeneous at lower temperature
b. Immiscible at higher temperature
c. Homogeneous at higher temperature
d. Rich in volatiles

إنتهت الأسئلة وبالتوفيق

Assiut University **Faculty of Science** **Geology Department**

Final Exam in Map of Egypt (410G), Summer Semester

Time: 2 Hours **50 Marks** **2021/2022**

Part 1 (Precambrian)

Answer the following questions:

Question (1)

Outline the field evidences for absence of contact aureoles around the ophiolite rocks. **(10 marks)**

Question (2)

List the differences between island arc volcanics and the Dokhan volcanics. **(10 marks)**

Question (3)

Outline briefly the ophiolite sequences in the Egyptian basement. **(5 marks)**

Part 2 (Panerozoic)

Choose the correct answer: **(5 marks)**

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