Assiut University
Faculty of Science
Geology Department

Credit hour system - summer semester
Rock-forming minerals (G 230)

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

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ملحوظـة: الامتـحان فى صفحتين

الجزء التحريرى (50 M)

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

1. **Z/O ratio equals 1/4 in:**
   a. Ringsilicates b. Orthosilicates c. Chainsilicates d. (a& c)
2. **Framework silicates have Z/O ratio equals:**
   a. 1/2 b. 2/5 c. 1/3 d. 1/4
3. **Minerals formed mainly from the reaction of the magmatic vapours and volatile constituents (gaseous emanations) with each other or by the interaction of these emanations with the surrounding rocks are:**
   a. Pneumatolytic Minerals b. Early Magmatic Minerals
   c. Subvolcanic Minerals d. Sedimentary Minerals
4. **Monoclinic calcium magnesium iron silicate is:**
   a. Enstatite b. Microcline c. Anorthite d. Augite
5. **Minerals found in ultrabasic rocks, forming 10% of crust with density (2.8-3.7) and moderately resistant to weathering:**
   a. Quartz b. K-feldspar c. Kaolinite d. Pyroxene
6. **An unsaturated mineral group having one oxygen atom less in the unit cell:**
   a. Sorosilicates b. Nesosililcates c. Inosilicates d. Tectosilicates
7. **Olivine, garnet, zircon, topaz, staurolite and epidote are examples of :**
   a. Nesosililcates b. Inosilicates c. Tectosilicates d. Sorosilicates
8. **Pyroxene minerals are named according to:**
   a. the chemical species occupying the X (or M2) site b. the Y (or M1) site
   c. the tetrahederal T site d. All of the above
9. **The fibrous or asbestos variety of serpentine is:**
   a. Biotite b. Crysotile c. Muscovite d. Quartz
10. **Y sites in the Di-octahedral mica is occupied by:**
    a. Only 4 ions b. Only 6 ions c. Only 8 ions d. Only 2 ions
11. **All mica minerals are:**
    a. High relief b. Moderate relief c. Isotropic d. Low relief
12. **All mica minerals show:**
    a. High interference color under crossed Nicols b. green colour
    c. 3 directional cleavages d. (b& c)
13. **Muscovite is :**
    a. Brown colour b. Colorless
    c. Strongly pleochroic under peolasrized light. d. No cleavage planes

14. Fine-grained mica commonly altered after orthoclase and gives the sheen to phyllite and schistose metamorphic rocks:

a. Sericite b. Chlorite c. Actinolite d. Gypsum

15. Glauconite is:

a. Muscovite structure, substituting Ca for K
b. Muscovite with Li in place of Al
c. Muscovite with Na in place of K
d. Sulfide group mineral

16. Antigorite, chrysotile, lizardite minerals belongs to:

a. Clay mineral group b. Chlorite group c. Serpentine group d. Amphibole group

17. *β* Quartz is:

a. Hexagonal, 870°C b. Trigonal, 573 °C c. Hexagonal, 1470 °C d. Cubic 573 °C

18. Cryptocrystalline quartz, either as fine-granular masses or as fibrous aggregates is:

a. Amethyst b. Goethite c. Chalcedony d. Chert

19. Silicate minerals that characterized by two sets of cleavages intersect at about 124° and 56° are:

a. Amphibole b. Pyroxene c. Plagioclase d. Dolomite

20. Fe-bearing verities of amphiboles are:

a. Green color b. Isotropic minerals c. strong pleochroism under polarized color d.(a& c)

21. Amphiboles crystallize into the following crystal systems:

a. Monoclinic b. Orthorhombic c. (a& B) d. Triclinic

22. The chief differences between amphiboles and pyroxenes are that:

a. Amphiboles show stronger pleochroism
b. Pyroxenes form oblique cleavage planes (at around 120 degrees)
c. Higher angle of extinction
d. Amphiboles have cleavage angles of approximately 90 degrees.

23. Pseudomorphs of amphibole after pyroxene are known as:

a. Garnet, b. Uralite c. Albite d. Orthoclase

24. The composition of orthoclase (feldspar) is expressed by the following equation:

a. $NaAlSi_3O_8$ b. $CaAl_2Si_2O_8$ c. $KAlSi_3O_8$ d. SiO_2

25. Minerals belonging to tectosilicates include:

a. Quartz b. Feldspars c. (a& b) d. Actinolite

الجزء الشفوى (10 M)

26. Feldspar group minerals are characterized by:

a. Two directions of perfect cleavage at 90 degrees
b. Hard (6 on the Mohs scale)
c. Forming well-developed crystals which are rectangular in shape
d. All of the above

27. Andesine has:

a. 0-10% anorthite b. 10-30% anorthite c. 30-50% anorthite d. 50-70% anorthite

28. Microcline is characterized by:

a. The highest temperature form of K- feldspar
b. Monoclinic
c. Well known cross-hatched twining
d. All of the above

29. Example of minerals belonging to the feldspathoids is:

a. Sanidine b. Nepheline c. Leucite d.(b& C)

30. Hydrated framework silicate is:

a. Zeolite b. Chlorite c. Orthoclase d. Albite

إنتهت الأسئلة وبالتوفيق

جامعة أسيوط
كلية العلوم - قسم الجيولوجيا

الامتحان التحريرى النهائى لطلاب المستوى الثانى بكلية العلوم – قسم الجيولوجيا
المقرر: علم الطبقات (٢١٠ ج)
الفصل الصيفى - العام الجامعى ٢٠٢١-٢٠٢٢م
الدرجة الكلية للأمتحان: ٥٠ درجة (بواقع درجة واحدة لكل جزئية من رقم ١ حتى رقم ٥٠) الزمن: ساعتان

ملحوظات هامة: - يتم تظليل (طمس - تسويد) الاجابة المختارة **بالقلم الجاف فقط**

Q1: Shade (T) for True statements or (F) for False statements

(30 marks; 1mark each)

1- Biostratigraphy is the branch of stratigraphy that deals with lithologic correlation of rock bodies.
2- Teil zones are used to define concurrent range zones.
3- Stage boundaries are usually marked by extinction events.
4- Transgressive/regressive sea-level cycles account for the accumulation of sedimentary sequences.
5- The principle of original horizontality explains that the strata was being formed initially vertically.
6- Fossils are used to infer relative rock ages.
7- In biostratigraphic zonation, species that overlap through space and time are ignored.
8- Cross-bedding is considered evidence for superposition.
9- Short ranging fossils are always index fossils.
10- Bracketing relationships are used to infer relative ages of geologic events.
11- Superposition means that younger rocks are at the base.
12- Sharp contacts between lithostratigraphic rock units result from gradual change in lithology.
13- Stratigraphy is the study and interpretation of layered rock sequences, based on their physical and biological characteristics.
14- Fossils can be considered as physical constituents of rocks.
15- An unconformity means the presence of gab between rock layers.
16- Fossils are the basis of lithostratigraphic analysis.
17- Soil stratigraphic units are termed "pedostratigraphic units".
18- Angular unconformity is considered a significant stratigraphic gap.
19- Unconformities are important tectonic evidences of superposition.
20- In radiometric dating we use radioactive isotopes to establish absolute ages of rocks.
21- Evidence for superposition can be stratigraphic only.
22- Rock formations can be divided into members.
23- Magnetostratigraphy uses similar magnetic polarity to establish age equivalency.
24- The time between the Cambrian and the Holocene is divided into three long eras.
25- Type locality refers to the specific geographic locality where the stratotype of a layered stratigraphic unit is situated.
26- A marker bed represents a “geologic instant” in time like a coal seam.
27- Walter's law describes how shallow and deep facies accumulate.
28- Worldwide mass extinction events, which are observed across stage boundaries, can be caused by local tectonic events.
29- In lithostratigraphic correlation, matched united can be diachronous.

30- Lithostratigraphic and biostratigraphic correlation of same sequences can vary considerably.

Q2: Shade the correct answer; A, B, C or D (20 marks; 1mark each)

31- Rock facies overlap over time due to .....
A- transgressions B- regressions C- subsidence/uplift D- all of them

32- Earth had a long history, which can be interpreted in terms of processes currently observed. This is known as the principle of .....
A- superposition B- original horizontality
C- uniformitarianism D- faunal succession

33- Upper Carboniferous rock strata correspond to .....
A- late Carboniferous B- early Carboniferous
C- early middle Carboniferous D- earliest Carboniferous

34- For the well-known phosphate rock unit in Egypt, which naming is correct?
A- Duwi Phosphate B- Duwi Formation
C- Phosphate Formation D- Dakhla Formation

35- Lithostratigraphic correlation means .....
A- correlating rock units of similar magnetic properties
B- matching up rock units of similar lithology
C- correlating contemporaneous fossil events
D- matching up chronostratigraphic rock units

36- Stratigraphy is the study of .....
A- mineralogical composition and textures of sedimentary rocks
B- fossilized remains of animals and plants
C- spatial and temporal relationships of rocks
D- none of these answers

37- A gradational contact between two beds develops due to occurrence of .....
A- one lithologic type B- two different lithologies
C- unconformity surface in between
D- abundant fossils in the lower unit

38- Paleontologic logs (paleologs) record .....
A- fluids B- depth C- resistivity D- fossils

39- Uniformitarianism is .....
A- a scientific approach stating that laws of nature have always operated the way they do today
B- a philosophy which holds that the tectonic forces has been relatively uniform over geologic time
C- another synonymous term for catastrophism D- None of these

40- What are the three major environments of deposition?
A- Lakes, rivers, oceans B- Swamps, beaches, marine shelves
C- Marine, continental, transitional D - Shelf, slope, abyssal seafloor

41- Biostratigraphic units can be distinguished from each other's by their .....
A-lithologic types B- Chemical composition
C- fossil content D- Mineralogical composition

42- Stratigraphic units bounded by unconformities are termed .....
A- Geochronometric B- Allostratigraphic
C- Pedopstratigraphic D- Diachronic

43- An apparent concordance that may exist between rock layers refers to .....
A- angular unconformity B- paraconformity
C- disconformity D- nonconformity

44- What is the correct order, from oldest to youngest, of the following geologic eras?
A. Paleozoic, Cenozoic, Mesozoic
B. Paleozoic, Mesozoic, Cenozoic
C. Cenozoic, Mesozoic, Paleozoic
D. Mesozoic, Paleozoic, Cenozoic

45- The geographic area that encompasses the stratotype of a stratigraphic unit is the .....
A- parastratotype B- type genus C- type species D- type locality

46- A new stratotype selected to replace an older one, which has been destroyed, covered, or otherwise made inaccessible is termed .....
A- Holostratotype B- Parastratorype C- Neostratotype D- none of them

47- Chronostratigraphy can establishes ..... surfaces.
A- isochrones B- dichrones C- polychrones D- all of them

48- The greatest time spans in the geologic time scale are termed .....
A- Periods B- Systems C- Eras D- Eons

49- A contact between sedimentary rock layers of remarkable varying dips that records missing of a geologic time is termed .....
A- a disconformity B- an angular unconformity
C- a paraconformity D- a nonconformity

50- Which of the following is not a method of correlating rock successions?
A-physical similarity B- time equivalency
C- fossil similarity D- lateral continuity

إنتهت الأسئلة مع أطيب الأمنيات بالتوفيق

Examiners:
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