



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA
FIRST SEMESTER EXAMINATIONS, NOV. – DEC. 2018

COURSE NO: MN 277

COURSE NAME: Economic and Exploration Geology

CLASS: MN II

TIME: 2 hours

Name: _____ Index Number: _____

Please answer all questions. Read every question carefully and circle/underline the correct answer or supply the correct answer to the spaces provided. Note that a false guess in the True/False section will attract a negative half (-1/2) from your accrued marks.

- Which of these textures best characterizes the rapid rate of cooling of magma and microscopic crystals?
A. phaneritic B. aphanitic C. porphyritic D. pegmatitic E. glassy
- Which of these best describes two stage cooling mechanism, large crystals (phenocrysts) embedded in a matrix of smaller crystals (groundmass) (Underline)
A. aphanitic B. glassy C. pegmatitic D. porphyritic E. phaneritic
- What is the main control on the size of crystals produced in igneous rocks?
A. Viscosity of the magma B. Volatile content C. Temperature of the magma
D. Shape of the igneous body E. Rate of cooling
- As a magma of Granodiorite composition cools down from 1500° C, which of the following minerals would crystalize first?
A. Biotite mica B. Pyroxene C. Olivine D. Na-rich Plagioclase E. Quartz
- If you are exploring for a bauxite ore deposit, which of the following is most likely to be associated with it?
A. laterite B. sulphides C. porphyritic rock D. sandstone E. ultramafic rock
- Which of these textures best characterizes fragmental appearance produced by violent volcanic eruptions, often appear more similar to sedimentary rocks?
A. pyroclastic B. aphanitic C. porphyritic D. pegmatitic E. glassy
- In checking for gold assaying errors, standards and field duplicates are usually used to check
A. Contamination and precision B. Bias and accuracy C. Accuracy and precision D, Accuracy and contamination

8. If a litre of sea water is evaporated, which of the following evaporites that precipitated will occur in the greatest amount?
 A. halite B. Gypsum C. Potash D. limestone E. chert
9. To check the variability of grades of pairs of samples, a QC champion would use?
 A, Bias plot B, Accuracy plot C. HARD plot D, Trueness plot
10. The elements of principal interest in radiometric exploration are
 A. U, Th, K B. U, P, K C. Th, U, Rn D. U, Th E. Th, K, Rn
11. These are examples of passive geophysical technique except?
 A. Gravity B. magnetic C. self potential D. radiometric E. resistivity
12. The Deposit of the Tarkwaian conglomerate is an example of a
 A. Mineral district B. Mineral province C. Mineral region D. Mineral centre
13. composition of magma are the major constituent of continental crust
 A. granitic B. Andesitic C. Mafic D. Iron E. Magnetic
14. Which of these geophysical methods is best suited in the search for disseminated sulphides?
 A. Induced polarization B. micro-seismic C. Electrical resistivity D. gravity
15. In QAQC, Half absolute relative deviation (HARD) plot is a statistical tool used to check
 A. Trueness B. Accuracy C. Bias D. Precision
16. Abundant metals include the following except?
 A. Iron (Fe) B. aluminum C. titanium D. magnesium E. gold
17. Themethod makes use of natural currents flowing in the ground that are generated by electrochemical processes to locate shallow bodies of anomalous conductivity.
18. This is usually referred to that rock which has to be removed during the normal course of mining in order to get to the ore.
19. A change in the mineralogy of the country rock as a result of a chemical reaction with hydrothermal solutions is known as
20. An occurrence of particular minerals or metals in sufficiently high concentration to be profitable to mine and process using current technology and under current economic conditions,
21. Those minerals which occur with the ore minerals but which have no value, such as quartz, calcite or pyrite are termed

22. What is the name of the grade of ore material delivered to the mill, often lower than measured or geological ore grade to dilution during mining?
23. They represent large sectors of the earth's crust with known deposits. Examples include shield deposits, folded geo-synclinal belt deposits etc.
24. Composition of Magmas are classified as, andesitic, and, based on the amount of SiO_2 they contain.
25. The role of temperature and heat is vital to the origin of magma, these phenomenon takes place at the margins.
26. The conditions that the influence the origin of magma are diverse and complex, yet we know these through what theory?
27. In general, oceanic crust is rich in and and therefore melts at higher temperatures than continental crust, which contains higher levels of silicon and aluminium.
28. Meteoric water is one which comes from the atmosphere and is especially important in processes.
29. Laterites are formed from oxidation and leaching of, whereas gossans are formed from
30. The Tarkwaian-hosted gold deposit consist of and
31. The gold belt is the most outstanding and prosperous gold belt system in Ghana.
32. The statistical tools and procedures used to check that the service or product really is meeting the specified needs is termed
33. Not all magmatic intrusions yield mineral deposits. [T/F]
34. A Probable Ore Reserve has a lower level of confidence but is of sufficient quality to serve as the basis for decision on the development of deposit. [T/F]
35. Example of syngenetic and epigenetic deposits vein and banded iron formation [T/F]
36. Solidification of a magma or the operations of metamorphism is an example of exogenetic processes [T/F]
37. Stratiform ore deposits are any type of ore-bodies, concordant or discordant, which are restricted to a particular stratigraphic horizon [T/F]

38. At the early stage of exploration, the economic characteristics of the project are not accurately estimated therefore economic cut-off cannot be confidently chosen. [T / F]
39. Structural deformations such as foliation, folding and faulting is related to Birimian-hosted deposits only. [T / F]
40. At the early stage of exploration, the economic characteristics of the project are not accurately estimated therefore economic cut-off cannot be confidently chosen. [T / F]
41. Geophysics is an integral part of most mineral exploration programmes, both greenfields and brownfields and also during mining of ore-bodies. [T / F]
42. Compared to airborne magnetic and EM methods, ground-based DC resistivity and IP methods can provide subsurface images with lower resolutions. [T / F]
43. There is clear intention a reconnaissance survey will find individual mineral deposits during geochemical survey. [T / F]
44. The success of gravity surveying depends on different earth materials having different bulk densities that produce variations in the measured gravity field. [T / F]
45. When an observation or data point appears to deviate markedly from other members of the population in which it occurs, is statistically referred to as
46. What are the main chemical properties sought for in geochemical exploration?
- a)
- b)
- c)
- d).....
47. Provide the properties sought for in the following geophysical techniques

Geophysical Method	Physical Property
Seismic	
Gravity	
Magnetic	
Induced Polarisation	
Ground Penetrating Radar (GPR)	
Electromagnetic Induction	

48. Mention the main causes of false anomalies in geochemical sampling?
- a)
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b)
.....

c)
.....

d).....
.....

e)
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