KATHMANDU UNIVERSITY
End Semester Examination
January/February 2024

Marks Scored:

Level : B.Sc.
Year : II

01 FEB 2024

Course : ENVS 205
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date :

SECTION "A"
[20Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate option from each set of choices

1. Which type of plate boundary is associated with the most powerful earthquakes?
   a. Convergent b. Divergent c. Transform d. Subduction

2. What is the term for the process by which rocks are broken down into smaller particles through physical, chemical, or biological means?
   a. Erosion b. Weathering c. Sedimentation d. Deposition

3. Which rock is formed through the cooling and solidification of molten lava?
   a. Sandstone b. Phyllite c. Basalt d. Conglomerate

4. The theory proposed by Alfred Wegner in 1912 on the based on his observation is
   a. Principle of superposition b. Continental drift
   c. Mountain building d. Plate tectonics

5. What is the primary factor responsible for the formation of caves in limestone bedrock?
   a. Frost action b. Acid rain
   c. Groundwater dissolution d. Volcanic activity

6. The Richter scale measures the _____.
   a. Amount of energy received 1 km from epicenter
   b. Amount of energy received 10 km from epicenter
   c. Amount of energy received 100 km from epicenter
   d. Amount of energy received 1000 km from epicenter

7. Which geological feature is formed by the accumulation and compression of plant and animal remains over time?
   a. Fault b. Fossil fuel c. Geyser d. Moraine

8. What is the term for the circular motion of material in the mantle caused by the heat from the Earth's core?
   a. Plate tectonics b. Convection currents
   c. Subduction zones d. Faulting

9. The general idea of large-scale continental displacements was first described by Frank B Taylor in _____.
   a. 1980 b. 1918 c. 1988 d. 908

10. The Mohs scale is used to measure the _____.
    a. Hardness of minerals
    b. Density of rocks
    c. Viscosity of lava
    d. Radioactive decay of elements

11. Which type of mass wasting involves the downward movement of a block of material along a curved sliding surface?
    a. Rockfall b. Creep c. Slump d. Mudflow

12. Which of the following is a characteristic feature of a meandering river?
    a. V-shaped valley b. Oxbow lake c. Waterfall d. Delta

13. Which one is the second most abundant mineral group in the Earth's crust?
    a. Sulphides b. Carbonates c. Silicates d. Oxides

14. _____ is a break in time in an otherwise continuous rock record.
    a. Fault b. Unconformity c. Joint d. Contact

15. The term "karst topography" is associated with _____.
    a. Deserts
    b. Caves and sinkholes
    c. Glacial valleys
    d. Volcanic islands

16. Rhyolitic lavas are high-viscosity felsic lavas, typically erupted at _____.
    a. 800° to 1200° C b. 400° to 700° C c. 1800° to 2000° C d. 1400° to 1700° C

17. The process of converting a sediment into sedimentary rock is called _____.
    a. Lithification b. Erosion c. Compaction d. Metamorphism

18. The geologic time scale is divided into _____.
    a. Decades b. Centuries c. Eras, Epochs d. Millennia

19. Which of the following is a characteristic feature of a subduction zone?
    a. Ocean ridge b. Trench c. Rift valley d. Transform fault

20. End of significant movement of MCT was on _____.
    a. 5my ago b. 35 my ago c. 15 my ago d. 50 my ago

SECTION "B"

[20 Q. × 0.5 = 10 marks]

Mark "T" for true and "F" for false

21. "Creep is the forward rotation out of the slope of mass of soil or rock about a point or axis below the centre of gravity of the displaced mass. [ ]

22. Chemical weathering stability is generally the normal to Bowen's reaction series. [ ]

23. Composite Volcano: Relatively large: ~100-150km wide. [ ]

24. Crustal abundance of gold (percent by weight) is 0.0000002. [ ]

25. Directed stress will orient minerals in two ways: Lineation and Foliation. [ ]

26. Valley is a sequence of folded rocks in which all the beds dip away from a central point. [ ]

27. The three main types of plate boundaries are convergent, divergent, and translucent. [ ]

28. Dunes are higher velocity bed-forms. [ ]

29. Geysers are formed where a complicated plumbing system allows steam pressure to be built up, causing intermittent eruptions. [ ]

30. GPS indicates that some parts presently rising at 50 mm/year. Everest 11-30mm/year [ ]

31. Meandering rivers gradually change their course by lateral migration. [ ]

32. Pahoehoe is a very high viscosity basaltic lava characterized by a ropy texture. [ ]

33. Intensity scales is established based on damage and human perception [ ]

34. Rock types, such as sandstone, generally contain more than 10 ppm U-238. [ ]

35. Rocks remain essentially liquid during metamorphism. [ ]

36. Shield Volcanoes has Gentle sides: ~2-10 degrees [ ]

37. Stock is massive, discordant intrusive body covering less than 100 km^2 [ ]

38. The appearance of the broken surface of a mineral in a direction that parallel to cleavage is generally expressed by the term fracture. [ ]

39. The Himalayan Mountains are still rising at the rate of 10 cm per year and being horizontally compressed at the rate of 12 to 13 cm per year. [ ]

40. Uranium-bearing (Uranium-238) rocks are the sources the radon gas that contaminates many homes. [ ]

KATHMANDU UNIVERSITY
End Semester Examination
January/February, 2024

Level : B.Sc.
Year : II
Time : 2 hrs. 30 mins.

01 FEB 2024

Course : ENVS 205
Semester : II
F.M. : 55

SECTION "C"
[3Q. × 7 = 21 marks]

Attempt *ANY THREE* questions.

1. What is an Earthquake? Discuss the significance of seismic waves in diagnosing the Earth's interior and locating the epicenter.

2. Analyze the geological factors contributing to the formation of aquifers and the challenges associated with groundwater depletion.

3. Define igneous rock and describe its major types and origins.

4. Explain the role of geological processes in the formation and mitigation of landslides. Provide examples of geological factors contributing to landslide susceptibility and discuss strategies for reducing landslide risks.

SECTION "D"

5. Write note on (*ANY FOUR*) [4 Q. × 4 = 16 marks]
   a. Sub Himalaya (Chure or Siwalik) Himalaya
   b. Composition of sedimentary rocks
   c. Recharge Area
   d. Core of the Earth
   e. Weathering

6. Differentiate between (*ANY FOUR*) [4 Q. × 3 = 12 marks]
   a. Meandering and Braided River channels
   b. MCT and MFT
   c. Rock fall and Rock slide
   d. Water Table and Pressure Surface
   e. Sedimentary rock and Metamorphic rock

7. Discuss in the following terms (*ANY THREE*) [3 Q. × 2 = 6 marks]
   a. Porosity
   b. Asthenosphere
   c. Anticline
   d. Pangea