Marks Scored:

KATHMANDU UNIVERSITY
End Semester Examination [C]
January, 2018

Level : B.E.
Year : II

Course : CIEG 209
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date JAN. 09. 2018

SECTION "A"
[20 Q. ×0.5 = 10 marks)

Mark " √ " in the appropriate box.

1. The study of the processes of formation of rocks are called _____
   a. Petrology b. Plate tectonics c. Mineralogy d. Volcanology

2. Core is divided into _____ parts.
   a. Two b. Four c. Three d. One

3. The S-wave wave _____.
   a. is surface wave
   b. does not travel through liquid
   c. fastest wave
   d. travels faster than P-wave

4. The density of Core reflects in the range of _____ .
   a. 4.8-5.2 g/cm^3 b. 3.0-451 g/cm^3 c. 9.9-12.8 g/cm3 d. 6.0-8.5 g/cm^3

5. _____ are formed either by water waves or by winds piling up the sediment into long ridges.
   a. Mud cracks b. Ripple marks c. Sole marks d. Cross-bedding

6. Palaeonotology is _____.
   a. study of assemblages of minerals
   b. the study of rocks and the condition in which rocks form
   c. study of crystallographic systems
   d. the science of evolutionary history of fossils

7. Extrusive rocks are formed by _____.
   a. exerting pressure and temperature below its melting point
   b. cooling of magma beneath the surface of the earth
   c. rapid cooling of molten lava
   d. crystallization of specific minerals beneath the surface of the earth

8. Most of sedimentary rocks exhibits _____
   a. gneissosity b. platy minerals c. foliations d. primary structures

9. Metamorphic rocks are derived from _____.
   a. sedimentary basin
   b. slow cooling of magma below the surface of the earth
   c. fast cooling of lava on the surface of the earth
   d. changes in pressures and temperatures below the melting of any igneous and sedimentary rocks

10. Strike of a bedding and foliation plane are _____.
    a. useful to trace the alignment of rocks
    b. useful to identify the types of rocks
    c. useful to understand the formation of rocks
    d. useful to know the slope of a layered rocks

11. Overturned fold is _____.
    a. in which axial plane is vertical, and both limbs dip in the same direction
    b. in which axial plane is inclined, and both limbs dip in the same direction
    c. in which axial plane is vertical, and both limbs dip in the opposite direction
    d. in which axial plane is inclined, and both limbs dip in the opposite direction

12. Landslide is _____.
    a. rapid movement of deposited or eroded sediments along the stream including large volume of water through the stream
    b. downward and outward movements of slope-forming materials along surfaces of separation and flowing at a faster rate
    c. movement of weathered surface soil layer/rock of steep slope
    d. detachment and down slope transport of soil and rock material under the influence of gravity

13. According to Cruden and Varnes (1992), velocity class 3 (Slow) categorizes to _____ mm/sec.
    a. 5×10^{-3} b. 50 × 10-6 c. 50 d. 5×10^{3}

14. Unconfined aquifer is defined as _____.
    a. water seeps from the ground surface directly above the aquifer
    b. a saturated but relatively impermeable material that does not yield appreciable quantities of water to well
    c. which an impermeable dirt/rock layer exists that prevents water from seeping into the aquifer from the ground surface located directly above
    d. a saturated but relatively impermeable material that does not yield appreciable quantities of water to well

15. Direct subsurface investigation is _____.
    a. related to exploratory excavation
    b. related with direct contact with subsurface through different geophysical surveys
    c. related with digging ditches, pits, trench, etc.
    d. related without direct contact with subsurface

16. _____ rock represents the sedimentary rock.
    a. Gneiss b. Shale c. Granite d. Rhyolite

17. The beds with gentle upstream dip (10-30°) indicates _____ for dams and reservoirssite selection.
    a. unstable b. ideal c. not bad d. unfavorable

18. _____ separates Siwaliks and Lesser Himalaya (Mahabharat) in the Nepal Himalaya.
    a. MFT b. MBT c. MCT d. STD

19. For the preparation of aggregates, _____ are used.
    a. gravels b. clay minerals c. cobbles d. boulders

20. The magnitude of earthquake 6 Richter Scale will be _____ times larger than the magnitude 4.
    a. 10 b. 100 c. 1000 d. 10,000

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SECTION "B"

[5 Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions:

1. Civil engineers should understand geological and engineering geological features for any types of infrastructure developments. Explain this statement with suitable examples.
2. Discuss theseismicity in Nepal with suitable examples.
3. Describe the engineering geological investigation of dam site selectionin detail.
4. How would you select suitable site for bridge construction? Explain in terms of engineering geological perspectives.
5. Explain the subsurface exploratory methods in detail.
6. Write down at least two specific engineering uses of dolomite, conglomerate, quartzite, rhyolite and schist rocks.

SECTION "C"

[2 Q. × 4 =8 marks]

7. Differentiate between *(ANY TWO)*:
   b. Normal fault and reverse fault
   c. Parallel unconformity and angular unconformity
   d. Behaviours of soil and rock

SECTION "D"

[2 Q. × 3.5 =7 marks]

8. Write Short Notes on*(ANY TWO)*:
   a. Rock forming mineral
   b. Hydrologic cycle
   c. Internal structures of earth