

KATHMANDU UNIVERSITY  
End of Semester Examination  
March/April 2017

Marks Scored:

Level : B.Sc.

Year : III

Course : ENV5 332

Semester: I

Exam. Roll No.:

Time: 30 mins.

F. M. : 20

Registration No.:

Date :

APR 09 2017

SECTION "A"

[20 Q.×0.5=10 marks]

Mark "√" in the appropriate box.

1. ----- is the direction of the line of intersected between a horizontal plane and the geological features.  
 Oblique             Transform             Dip             strike
2. The Lesser Himalaya is composed of basically low grade ----- rocks.  
 sedimentary             igneous             metamorphic             tectonite
3. The boundary between two plates can be a divergent boundary, a convergent boundary or a ---- boundary.  
 transfer             transform             transformation             transit
4. Ripple marks are found in bedding plane of ----- water deposition.  
 shallow             deep             huge             dirty
5. ----- consists of sets of lamina or beds that are inclined relative to one another within the layers.  
 Joint             Cross bedding             Bedding plane             Ripple marks
6. The capacity of the rock to split along certain directions yielding parallel or subparallel smooth surface is  
 Hardness             Fracture             Cleavage             Lusture
7. The general idea of large scale continental displacements was first described by Frank B Taylor in -----.  
 1708             1808             1908             2008
8. ----- rock has occupied about 75% by the area of continent.  
 Igneous             Sedimentary             Metamorphic             Meteorite
9. The Higher Himalayan Zone mainly consists of huge pile of strongly ----- rocks.  
 Igneous             Sedimentary             Metamorphic             Tectonite
10. Most earthquake are caused by the sudden slip along geologic -----.  
 Folds             Joints             Flood             Faults
11. Normal faults are caused by ----- stress.  
 Compressional             tensional  
 Shear             zero

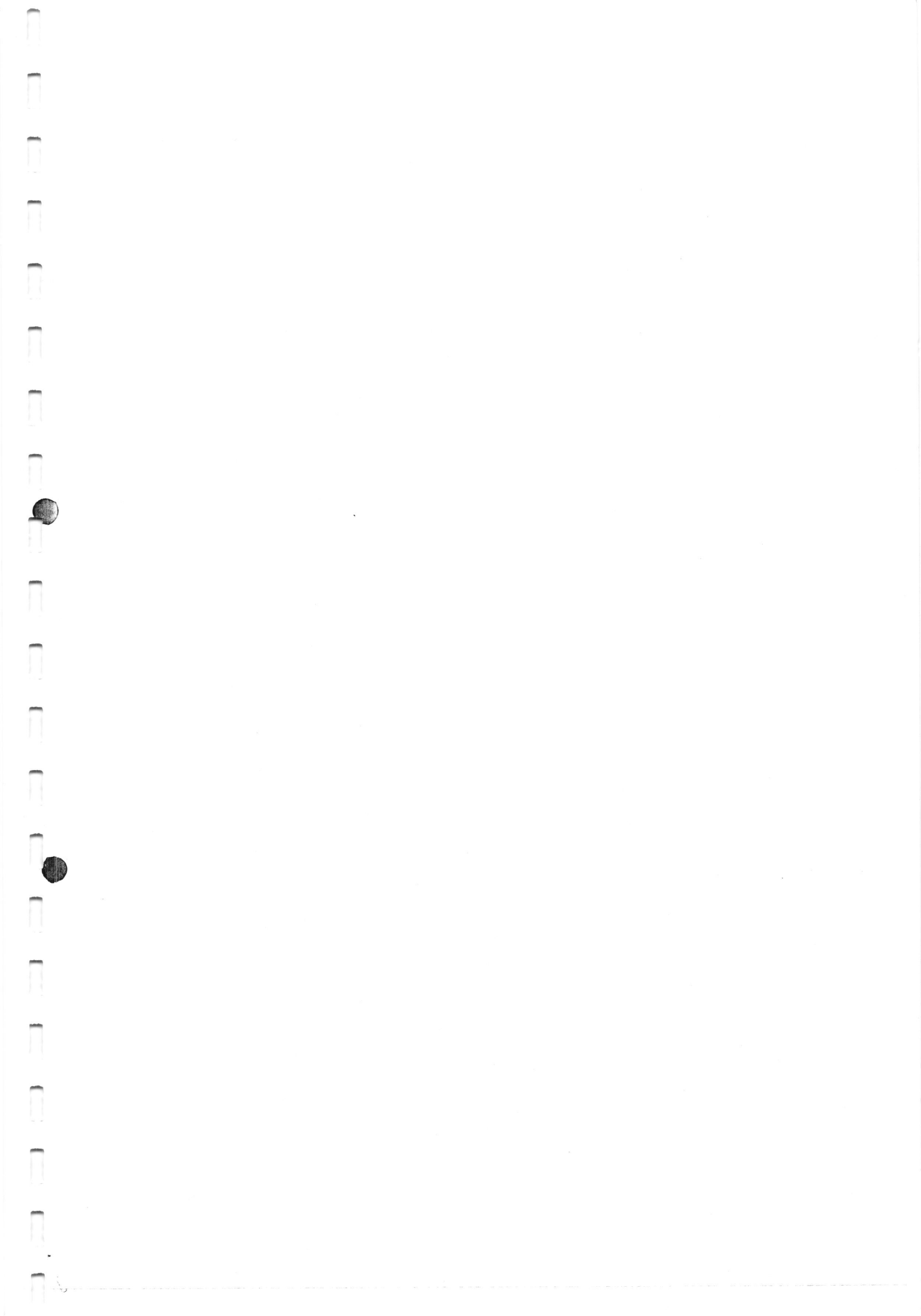
12. The ----- is one of the youngest mountain systems on the world.  
 Himalaya       Alps       Rocky       Andes
13. The Terai is made up of recent river deposits and consists of ----- sediment in the north.  
 fine       coarse       medium       flaky
14. Vernes 1978 classification is known for  
 Flood       Earthquake       Landslide       Volcano
15. ----- flows are moving masses of loose mud, sand, soil, rock and water.  
 Debris       Rock       Mud       Clay
16. ----- is a rare, naturally-occurring mineral composed of carbon.  
 Feldspar       Quartz       Mica       Diamond
17. ----- is the principal constituent of limestone and marble.  
 Chlorite       Halite       Calcite       Kyanite
18. ----- plate boundaries are locations where plates are moving away from one another.  
 Convergent       Divergent       Transform       Subduction
19. Sediment (typically sand) transported by intermittent jumps - a transitional state between bedload and suspended load is  
 Saltation       Stauration       Slatation       Startation
20. The level to which water will rise in an unconfined aquifer is  
 Pressure level       Pizo level       Water Table       Table water

SECTION "B"  
 [20 Q.×0.5=10 marks]

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

1. At least two stations are required to determine the location of an epicenter. [ ]
2. Weathering is the breaking down of rocks, soils and minerals as well as artificial materials through contact with the Earth's Atmosphere, biota and waters. [ ]
3. Inner core is almost 200km thick and comprises about 33% of the Earth's volume. [ ]
4. Fossil fuel is that energy resource that have formed as the result of the burial and subsequent transformation of inorganic material. [ ]
5. Quartzite is a igneous rock. [ ]
6. Sandstones are metamorphic rocks. [ ]
7. When a divergent boundary occurs beneath oceanic lithosphere, the rising convection current below lifts the lithosphere producing a mid-ocean ridge. [ ]

8. Earthflow is a fluid movement of relatively fine-grained material, e.g. soils, weathered shale, and clay. [ ]
9. A "long" time may not be important for geologist unless it is greater than 1 hundred years. [ ]
10. Earthquakes less than  $M = 4$  are not felt by people. [ ]
11. Atmosphere and hydrosphere formed 6 billion years ago. [ ]
12. Fossils are recognized in rocks as old as 3.5 billion years. [ ]
13. Dip direction is defined as compass direction of a rock layer as it intersects with a horizontal surface. [ ]
14. Dome is a sequence of folded rocks in which all the beds dip away from a central point. [ ]
15. Bed Load is known for coarser-grained sediment (typically sand and gravel) transported on the bottom of the stream bed by rolling and sliding. [ ]
16. "Earthquakes kill people, buildings don't kill people." [ ]
17. The average density of asthenosphere is  $\approx 1.3 \text{ g/cm}^3$ . [ ]
18. New crust created at Mid-ocean ridge—old crust destroyed (recycled) at subduction zone. [ ]
19. Metamorphism involves process of Solid -liquid - state recrystallisation. [ ]
20. The Moh's hardness of calcite is 6. [ ]



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F. M. : 55

SECTION "C"

[3 Q.×7=21 marks]

Answer *ANY THREE* questions

1. What are causes for landslide? What are the various parameters applied to mitigate landslide?
2. What are major geological units and its characteristics of Nepal Himalaya? Describe briefly.
3. "Unconfined aquifers are more at risk from groundwater pollution than confined aquifers." Explain with examples.
4. Describe the theory of plate tectonics and its types.

SECTION "D"

5. Write note on (*ANY FOUR*)

- a. Weathering Processes
- b. Darcy's Law
- c. Earthquakes measurement
- d. Types of Lavas
- e. Groundwater recharge area

[4 Q.×4=16 marks]

6. Differentiate between (*ANY FOUR*)

- a. Minerals and Rocks
- b. Igneous rocks and Metamorphic rocks
- c. P and S waves
- d. Meandering Streams and Braided Streams
- e. Lithosphere and Asthenosphere

[4 Q.×3=12 marks]

7. Discuss in the following terms (*ANY THREE*)

- a. Undiscovered reserves
- b. Cinder Cones
- c. Angle of Repose
- d. Blind Faults

[3 Q.×2=6 marks]

