

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks Scored:

Level : B.Sc.
Year : III

Course : ENVS 332
Semester : I

Exam Roll No. :

Time : 30 mins.

F. M. : 20

Registration No. :

Date 17 FEB 2019

SECTION "A"

[20 Q × 0.5 = 10 marks]

Mark "X" in the appropriate box.

1. The term "groundwater table" is....
 top of saturated zone top of confined aquifer
 boundary of confined and unconfined aquifer pressure surface
2. Which one is minor but geologically important element?
 magnesium sodium
 carbon calcium
3. The area of a confined aquifer is the area where rainfall enters in the aquifer.
 Recharge area Area of confined aquifer
 Groundwater table area Area of unconfined aquifer
4. A dolomite is
 Sulfide rock Sulphate rock
 Carbonate rock Silicate rock
5. Refers to unconsolidated, fragments of rocks greater than 25.6 mm in diameter.
 Pebble Gravel
 Cobble Boulder
6. Displaced regular crack that develops in rocks because of tectonic force is
 Joint Fault
 Fracture Fold
7. The branch of science concerned with the origin, structure, and composition of rocks is
 Petrology Mineralogy
 Layerology Sedimentology
8. The point or location in Earth where earthquake energy is first released; during and earthquake event
 Focus Epicenter
 Center Metacentre
9. A rift valley is formed on a
 convergent plate boundary divergent plate boundary
 transform plate boundary none of above

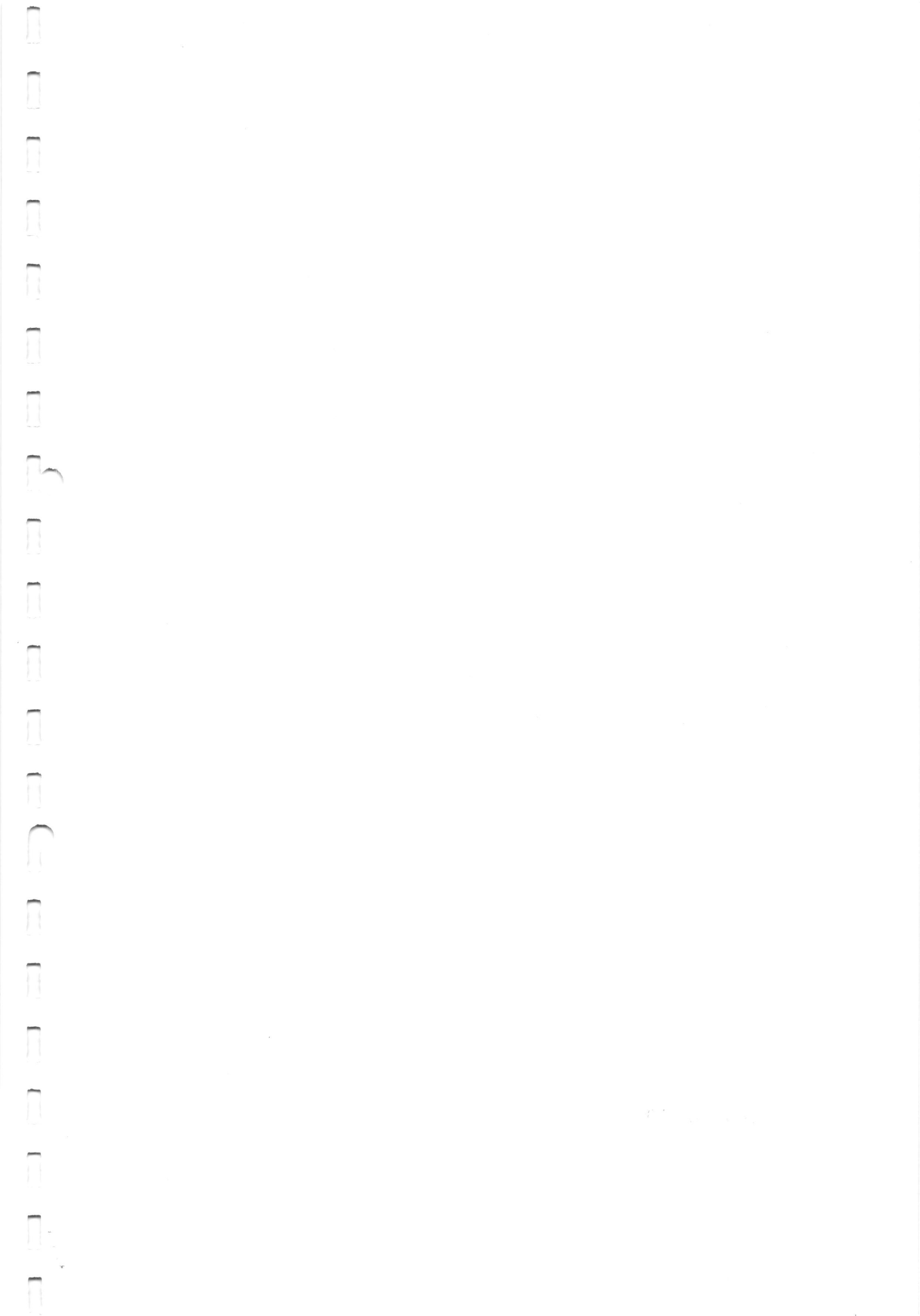
10. Which one is not a metamorphic rock.
 Slate Phyllite
 Granite Gneiss
11. Ripple marks are formed on ----- water deposition.
 shallow deep
 huge running
12. ----- rock has occupied about 5% by volume of upper crust.
 Igneous Sedimentary
 Metamorphic Meteorite
13. Intensity of reflection of light from the mineral surface is
 Hardness Specific gravity
 Cleavage Lusture
14. The total metamorphic rock thickness of the higher Himalayan is around-----
 -----km.
 41 31
 21 10
15. A device used to record motion of the Earth is
 wavograph seismograph
 Reighgraph lithograph
16. The Churiya (Sub-Himalaya) Zone mainly consists of huge pile of ----- rocks.
 Igneous Sedimentary
 Metamorphic Volcanic
17. Vernes 1978 classification is known for
 Flood Earthquake
 Landslide Volcano
18. Types of sediment include
 Suspension Bedload
 Saltation all of above
19. Physical and chemical changes that occur in sediments and rocks when they are exposed
 to the atmosphere and biosphere is
 weathering climating
 moisuring fracturing
20. Acute angle between the rock layer and the horizontal surface, measured perpendicular to
 strike is
 dip angle dip direction
 strike direction strike angle

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SECTION "B"
[20 Q. × 0.5 = 10 marks]

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

1. "Buildings kill people, Earthquakes don't kill people." []
2. According to the theory of plate tectonics Earth's surface can be divided into about fifty large and small plates. []
3. Anticline is a form of folded rocks in which the younger rock exists in the center []
4. Calcite is the principal constituent of limestone and marble. []
5. Debris flows are moving masses of loose mud, sand, soil, rock and water. []
6. Dimond is a rare, naturally-occurring mineral composed of hydrogen. []
7. Divergent plate boundaries are locations where plates are moving away from one another. []
8. Earthquake energy travels in the form of straight line. []
9. Gabbro is a metamorphic rock. []
10. Lesser Himalaya lies in between Main Boundary Thrust (MBT) and Main Central Thrust (MCT). []
11. Mantle is almost 200km thick and comprises about 83% of the Earth's volume. []
12. Most earthquake are caused by the sudden slip along geologic folds. []
13. Reversed faults are caused by tensional stress. []
14. Sediments deposited by river are known as colluvium. []
15. Specific gravity is the "the ratio between the density of a mineral and that of water at 4 degree Celsius." []
16. Structural geology is the study of the formation of rocks and its effects. []
17. The Pressure Surface is the level to which water will rise in wells in unconfined aquifers. []
18. The Terai is made up of recent river deposits and consists of course sediment in the north. []
19. The travel time of seismic wave is dependent upon the media through which it passé. []
20. Cleavage is the capacity of the rock to split along certain directions yielding parallel or subparallel smooth surface. []



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F. M. : 55

SECTION "C"

[3Q. × 7 = 21 marks]

Answer *ANY THREE* questions.

1. What is environmental geology? How is it important to environmental scientist? Express your opinions.
2. What is earthquake? Describe on how to locate epicenter? How is it measured and mention its unit?
3. What are the major types of plate boundaries? Describe briefly.
4. What are the main sources of groundwater contamination in context of Kathmandu valley shallow aquifer? How can we take to prevent? Discussion on your idea for the mitigation.

SECTION "D"

5. Write note on (*ANY FOUR*) [4 Q. × 4 = 16 marks]
 - a. Weathering
 - b. Aquifers
 - c. Groundwater discharge calculation.
 - d. Interior of the Earth
 - e. Continental evolution
6. Differentiate between (*ANY FOUR*) [4 Q. × 3 = 12 marks]
 - a. Focus and epicenter
 - b. Pressure surface and groundwater table
 - c. Faults and joints
 - d. Anticline and syncline
 - e. Igneous rock and Metamorphic rock
7. Discuss in the following terms (*ANY THREE*) [3 Q. × 2 = 6 marks]
 - a. creep
 - b. Seismograph
 - c. Artesian
 - d. Capacity of the river (flow)

