

Mark Scored:

KATHMANDU UNIVERSITY  
End Semester Examination  
August/September, 2017

Level : B. Sc./B. Tech.  
Year : III

AUG 27 2017  
Course : ENVS 335  
Semester : II

Exam Roll No. :

Time: 30 min

F. M. : 20

Registration No.:

Date :

SECTION "A"

[20 Q × 0.5 = 10 marks]

Mark "X" in the appropriate box.

1. Cold matters such as snow and ice on earth exist in a space called  
 lithosphere       hydrosphere       cryosphere       biosphere
2. Which curve is used to check the consistency of rainfall records  
 double mass curve     single mass curve       rainfall curve       discharge curve
3. Sectional staff gauge measures the  
 velocity of the flow       height of water in a channel  
 discharge of a river       sediment load in a river
4. A sudden flood due to cloud burst is called  
 GLOF       flash flood       riverine flood       high flood
5. Which method is suitable for quick and rough estimate of stream velocity?  
 Float method       area-velocity method  
 Ultrasonic method       current meter method
6. Current meter measures the  
 velocity of the flow       height of water in the channel  
 discharge of the river       sediment load in the river
7. Seeping off of precipitation from ground and reaches to ground water table is called  
 percolation       infiltration       discharge       evaporation
8. The average infiltration rate is called  
  $\Phi$ -index       W-index  
 infiltration index       evaporation index
9. The top of the saturated zone of ground water is called  
 water table       water tank       water bed       water layer
10. Density of fresh snow ranges from  
 100 – 200 kg/m<sup>3</sup>     50 - 70 kg/m<sup>3</sup>       200 – 300 kg/m<sup>3</sup>     830 – 917 kg/m<sup>3</sup>

Fill in the blanks.

11. ....meter is used to measure infiltration.
12. Hyetograph is a plot of ..... vs.....
13. Staff gauge is used to measure .....
14. .... separates unsaturated and saturated ground water zones.
15. If we have stage data of a river then we can derive discharge using .....curve.
16. Annual deposit of sediment forming distinctive layers is called ....
17. The maximum quantity of water that the soil can retain against the force of gravity is called.....
18. ....is a major water induced disaster which kills many people every year in Nepal.
19. A lake formed by glacier activity and dammed by ice is called .....
20. The Last Glacial Maximum (LGM) was occurred about .....years before.

SECTION "B"

[10 Q. × 1 = 10 marks]

Define in one sentence.

21. Effective rainfall:
22. Hyetograph:
23. Accumulation area of a glacier:
24. Prompt interflow:
25. Equilibrium line of a glacier:

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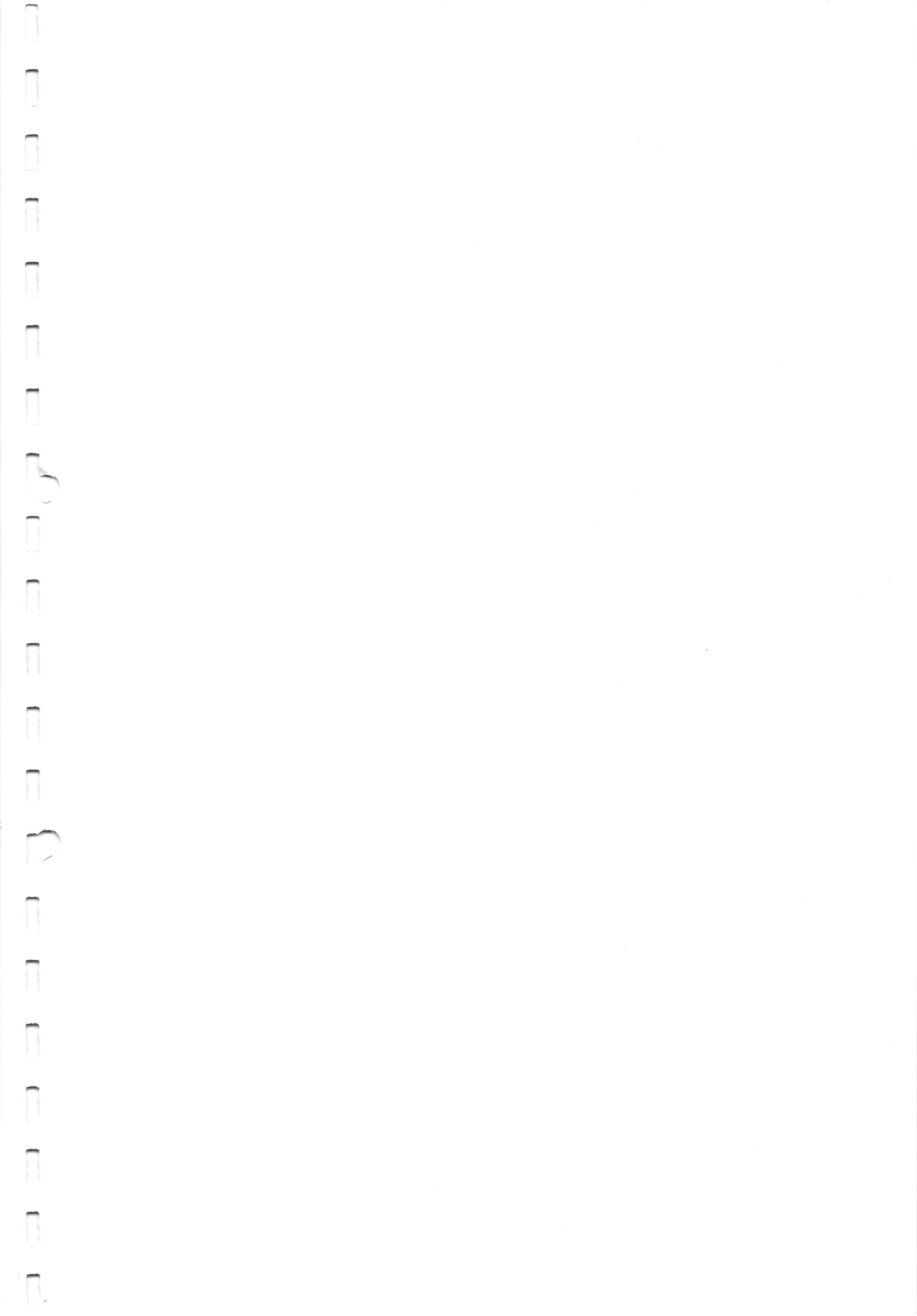
26. Firn:

27. Glacier:

28. Glacial lake:

29. Flash flood:

30. Hydrograph:



KATHMANDU UNIVERSITY  
End of Semester Examination  
August/September, 2017

AUG 27 2017

Level : B. Sc./B. Tech.  
Year : III  
Time : 2 hrs. 30 mins.

Course : ENV5 335  
Semester : II  
F. M. : 55

SECTION "B"

(Long answer questions)

[4 Q. × 7 = 28 marks]

Attempt *ANY FOUR* questions.

1. Define briefly evaporation and evapotranspiration. Explain in detail factors that affect the evaporation from a water body.
2. What is current meter? Explain about different types of current meter. Describe a method to estimate discharge of a river by area-velocity method.
3. Define runoff and describe different components of runoff with figure.
4. Describe different types of flood and flood control measures in detail.
5. Explain the importance of glacio-hydrological studies in Nepal.

SECTION "C"

(Short answer questions)

6. Differentiate between *ANY THREE* [3 Q. × 4 = 12]
  - a) Actual evapotranspiration and Potential evapotranspiration
  - b) Flood hydrograph and Unit hydrograph
  - c) Flood and runoff
  - d) Glacier and glacial lake
7. Write short notes on *ANY THREE* [3 Q. × 3 = 9]
  - a) Confined aquifer
  - b) Suspended sediment
  - c) Lysimeter
  - d) Staff gauge
8. Give reasons why [2 Q. × 3 = 6]
  - a) water level is measured continuously instead of discharge from a river.
  - b) snowfall occur even in summer in the high mountain areas of Nepal.

