KATHMANDU UNIVERSITY
End Semester Examination
August, 2018

Marks scored:

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

Course : ENVS 335
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date : AUG 0 8 2018

SECTION "A"
[20 Q × 0.5 = 10 marks]

Mark "**X**" in the appropriate box.

1. A point rainfall represents plots of
   [ ] magnitude vs time
   [ ] intensity vs time
   [ ] magnitude vs duration
   [ ] intensity vs magnitude

2. Which method is suitable for measuring discharge in flood flow in mountain stream
   [ ] Dilution method
   [ ] Ultrasonic methods
   [ ] area-velocity method
   [ ] slope-area method

3. A line joining equal rainfall is called
   [ ] isotherm [ ] isohyet [ ] isobar [ ] isoline

4. A Depth-Area-Duration (DAD) curve is a plot of
   [ ] rainfall depth vs time
   [ ] rainfall depth vs duration
   [ ] discharge vs time
   [ ] rainfall depth vs area

5. A mass curve of rainfall represents plots of
   [ ] magnitude vs time
   [ ] intensity vs time
   [ ] accumulated rainfall vs time
   [ ] intensity vs magnitude

6. Infiltrometer is used to measure
   [ ] infiltration [ ] snow density [ ] rainfall [ ] rainfall

7. A hydrograph is a plot of
   [ ] rainfall intensity against time
   [ ] cumulative rainfall against time
   [ ] stream discharge against time
   [ ] cumulative rainfall against time

8. Sectional staff gauge measures the
   [ ] velocity of the flow
   [ ] discharge of the river
   [ ] height of water in the channel
   [ ] sediment load in the river

9. Yield represents
   [ ] annual rainfall
   [ ] annual discharge
   [ ] annual runoff volume
   [ ] annual evaporation

10. Snow tube is used to measure
    [ ] depth and water equivalent
    [ ] water equivalent
    [ ] snow density
    [ ] weight

Fill in the blanks.

11. Class A evaporation pan is used to measure ....

12. A .....is generated by runoff on crop land.

13. Mass balance of a glacier is an algebraic sum of ... . and ... .

14. An ephemeral stream has no contribution of .....

15. A lake formed by glacier activity is called .....

16. The average residence time of water vapor in the atmosphere is about .....days.

17. Water located beneath the ground surface in soil pore spaces and in the fractures is called.....

18. Rain gauge should be located away .....the height of an obstruction.

19. Evapotranspiration is a combination of .....and.....

20. The intermediate stage between snow and ice is called.....

SECTION "B"

[10 Q. × 1 = 10 marks]

Define in one sentence.

21. Unit hydrograph:

22. Double mass curve:

23. Snow:

24. Base flow:

25. Stage:

26. Water equivalent:

27. Lysimeter:

28. Evaporimeter:

29. Water table:

30. Intermittent stream:

KATHMANDU UNIVERSITY
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Year : III
Time : 2 hrs. 30 mins.

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

SECTION "C"
(Long answer questions)
[4 Q. × 7 = 28 marks]

Attempt *ANY FOUR* of the following.

1. Write about the importance of ground water in hydrology and types of aquifers in detail.

2. Describe methods to measure discharge of a river by area-velocity and salt dilution.

3. Explain about snow, firn and ice with densities. Also describe the different snow measurement techniques.

4. Explain about sediment transport mechanisms and different types of sediment loads.

5. Explain the importance of glacio-hydrological studies in relation with hydropower generation and irrigation in Nepal.

SECTION "D"
(Short answer questions)

6. Differentiate between *ANY THREE* of the following: [3 Q. × 4 = 12]
   a) Direct runoff and base flow
   b) Hydrograph and flood hydrograph
   c) Hydrological cycle and runoff cycle
   d) Intermittent stream and ephemeral stream

7. Write short notes on *ANY THREE* of the following: [3 Q. × 3 = 9]
   a) Types of flood
   b) Suspended sediment
   c) Darcy's law
   d) Current meter

8. Give reasons why [2 Q. × 3 = 6]
   a) bed material load does not travel long distance before settling on the river bed.
   b) area-velocity method is not suitable to measure discharge of a turbulent mountain river.

KATHMANDU UNIVERSITY
School of Science/ School of Engineering
End-Semester Examinations
August, 2018

Examination Time: 11:00 A.M. to 2.00 P.M.

Date	Day	I - II	II – II	III-I	III – II	IV – I
August 8	Wednesday	PHYS 102 ARCH 161			EEEG 309 MEEG 309 MEEG 317 COMP 302 GEOM 315 CIEG 308 ENVS 335 PHAR 311 BIOT 306 PHYS 311 CHEG 305	MGTS 403
August 9	Thursday		MATH 208 ENVS 224 PHAR 214 BIOT 210 HBIO 213 PHYS 213	MGTS 301		
August 10	Friday	ENVE 101 CHEM 102			GEOM 307 ENVS 306	
August 12	Sunday	MATH 106			ETEG 301 EPEG 301 MEEG 318 COMP 314 CIEG 309 MGTS 302 BIOT 307 PHYS 312 CHEG 310 CHEM	COMP 401
August 13	Monday		EEEG 214 MEEG 207 COMP 232 GEOM 206 CIEG 208 ENVS 204 BIOL 206 BIOT 208 HBIO 215 PHYS 212 CHEG 211	COMP 307	ENVS 318 ENVS 345	
August 14	Tuesday	ENGG 112 ENVS 101 PHAR 111 BIOT 101 STAT 101				

Controller of Examinations

KATHMANDU UNIVERSITY
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End-Semester Examinations
August, 2018

Date	Day	I - II	II – II	III-I	III – II	IV – I
August 15	Wednesday	ARCH 112			EPEG 315 ETEG 303 MEEG 302 COMP 306 MATH 322 GEOM 319 CIEG 312 ENVS 303 ENVE 311 PHAR 313 BIOT 308 PHYS 313 CHEG 312	COMP 472
August 16	Thursday		EEEG 215 MEEG 202 COMP 231 CEEG 201 CIEG 206 CHEM 212 HBIO 212 PHYS 211 CHEG 213	COMP 315		
August 17	Friday	MATH 104 MATH 102 MATH 103				
August 19	Sunday	ENGT 102 NEPT 101			MEEG 308 COMP 304 COMP 409 CIEG 314 GEOM 306 ENVS 337 MEEG 306 PHAR 315 BIOT 309 PHYS 314 CHEG 313	COMP 421
August 20	Monday		MCSC 202 PHYS 207 CHEM 203 BIOT 207	COMP 316	EPEG 318 ETEG 304	

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August, 2018

Date	Day	I - II	II – II	III-I	III – II	IV – I
August 21	Tuesday				CHEG 314 GEOM 313	
August 22	Wednesday		BIOL 207		MGTS 303	COMP 478
August 23	Thursday	COMP 116 COMP 102	COMP 204 CIEG 207 PHAR 212	COMP 317	COEG 301 ETEG 305 ENVS 331 ENVE 399 BIOT 305	
August 24	Friday		COMP 201 MEEG 206 BIOT 209 INAN 211 STAT 221 CHEG 210		COMP 341 GEOM 310 CIEG 313 CIEG 318 CHEG 315 CHEG 323 PHAR 316	
August 27	Monday		MATH 207 GEOM 204 CIEG 209 ENVE 205 BIOT 206 MATH 217 CHEG 212	COMP 342	COMP 342 COMP 323 CIEG 310 ENVS 336 INAN 301	COMP 484

Note: *Examinations will be conducted as per this schedule and under no circumstance the dates and times will be changed unless the University publishes prior notice.*

Controller of Examinations