KATHMANDU UNIVERSITY
End Semester Examination [C]
May/June, 2019

Mark Scored:

Level : B. Sc.
Year : IV

Course :ENVS 415
Semester: I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date : 31 MAY 2019

SECTION "A"
[16 Q × 0.5 = 8 marks]

Choose and mark (X) against the correct answer.

1. An atoll is a/an
   [ ] coral reef feature [ ] deltaic feature
   [ ] estuarine feature [ ] deep sea feature

2. Which of the following statement is wrong about macroinvertebrates?
   [ ] These are bottom dwelling invertebrates
   [ ] They represent a large taxonomic group
   [ ] They form the base of the aquatic food chain
   [ ] They are frequently used in bioassessment

3. Ekman grab is used to collect
   [ ] water [ ] sediment [ ] fish [ ] plankton

4. Siliceous cell wall is characteristic of
   [ ] Chlorophyceae [ ] Cyanophyceae
   [ ] Bacillariophyceae [ ] Rhodophyceae

5. A Secchi disc is used to measure
   [ ] water turbidity [ ] water salinity
   [ ] water conductivity [ ] water transparency

6. Which of the following is used to measure a lake depth?
   [ ] Planimeter [ ] Echo-sounder [ ] Gravity corer [ ] Van Dorn sampler

7. Rain of dead organic matter is the chief source of food in
   [ ] littoral zone [ ] coastal waters [ ] deep ocean [ ] coral reefs

8. Flood plain pulse concept deals with
   [ ] longitudinal aspect of a river
   [ ] horizontal aspect of a river
   [ ] vertical aspect of a river
   [ ] upstream downstream aspects of a river

9. Pools are characterized by
   [ ] higher current and higher DO [ ] higher current and lower DO
   [ ] lower current and higher DO [ ] lower current and lower DO

10. Which of the following is wrong about fjords?
[ ] These are narrow ocean inlets scoured by glaciers
[ ] Fjords are usually found in higher latitude regions
[ ] Fjords often have low temperature
[ ] Fjords are usually found in tropical regions

11. Epipsammic taxa are found on
[ ] rocks [ ] macrophytes [ ] sand [ ] algae

12. Red Chironomids are indicators of
[ ] heavy metal contamination in water bodies
[ ] organic pollution in water bodies
[ ] high DO values in water bodies
[ ] POPs pollution in water bodies

13. The deep trenches in ocean beds are called
[ ] pelagic zone [ ] neritic zone [ ] intertidal zone [ ] Hadal zone

14. Which of the following is also known as the 'aufwuchs'?
[ ] phytoplankton [ ] nekton [ ] periphyton [ ] zooplankton

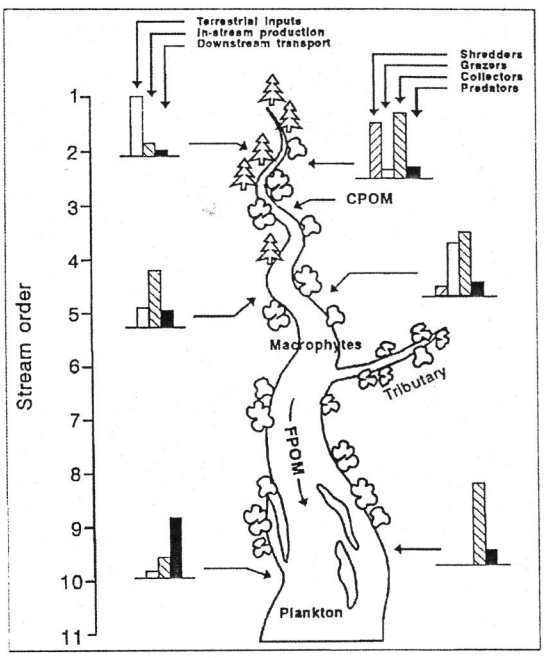
15. Eutrophic lakes are characterized by
[ ] C and N loading [ ] N and P loading
[ ] Si and P loading [ ] Si and N loading

16. Headwater streams are characterized by
[ ] high current and low DO [ ] high current and high DO
[ ] low current and low DO [ ] low current and high DO

SECTION "B"

[4 Q × 0.5 = 2 marks]

17. The schematic figure represents
[ ] Serial Discontinuity Concept
[ ] River Continuum Concept
[ ] Nutrient Spiralling Concept
[ ] Hyporheic Concept



18. The higher stream orders are characterized by
[ ] cold water fishes
[ ] cool water fishes
[ ] warm water fishes
[ ] none

19. The higher stream orders are characterized by
[ ] higher turbidity and high current
[ ] higher turbidity and low current
[ ] lower turbidity and high current
[ ] lower turbidity and low current

20. The tributaries contribute to
[ ] autochthonous input [ ] allochthonous input
[ ] both [ ] none

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SECTION "C"
[10 marks]

Fill in the blanks.

21. _____ is the deepest freshwater lake.

22. Epilithic algae are found on_____.

23. Thermocline is present in _____ layer.

24. A river at its origin is called the _____ and _____ before it enters into the sea.

25. The most dominant cation and anion in fresh waters are _____ and _____ respectively.

26. "Annie", "Fannie" and "Mike" are _____.

27. The full form of SAR is _____.

28. Lakes which undergo mixing twice a year are called _____.

29. NEPBIOS was developed by _____.

30. _____ is the study of the reconstruction of past environmental changes in lakes and their catchments.

31. Three endemic fish species found in Lake Rara, Nepal are _____, _____ and _____.

32. Cryconite holes are found in _____.

33. A lake basin map is called a _____ map.

34. The phenomenon of light production by living organisms is called _____.

35. Specialized nitrogen fixing cells found in some Cyanophyceae are called _____.

36. Heterotrophic aquatic swimmers are called _____.

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SECTION "D"

[3 Q. × 7 = 21 marks]

Attempt *ALL* questions.

1. Define flood pulse concept. Add a note on the significance of the flood pulse with appropriate examples.
2. Define eutrophication. Add a note on the impacts of eutrophication on lake water physico-chemical and biological features.
3. Give an account of the different stressors and their impacts on freshwater ecosystems citing appropriate examples.

SECTION "E"

4. Write short notes on (*ANY FOUR*): [4Q × 2 = 8]
   a. Redfield ratio
   b. Lake types based on mixing
   c. Characteristic features of deep sea
   d. Saline intrusion
   e. Paradox of planktons

5. Differentiate between (*ANY FOUR*): [4Q × 2 = 8]
   a. Summer kill and winter kill
   b. Neritic zone and pelagic zone
   c. Orthograde and Clinograde lake profiles
   d. Tributaries and distributaries
   e. Lentic systems and lotic systems

6. Give an account of (*ANY THREE*): [3Q × 4 = 12]
   a. Ramsar sites in Nepal
   b. Hyporheic concept
   c. Dystrophic lakes
   d. Bioindicators

7. Give reasons for the following statements: [4Q × 1.5 = 6]
   a. Productivity is higher in Arabian Sea than in the Bay of Bengal.
   b. Sedimentation rate is low in high altitude lakes.
   c. Tectonic lakes are often characterized by endemicity.
   d. Wetlands are considered as the kidneys of the earth.