

THE OPEN UNIVERSITY OF SRILANKA
M.Sc. /POST GRADUATE DIPLOMA IN ENVIRONMENTAL
SCIENCE
NEP 2219 – AQUATIC RESOURCES AND THEIR
MANAGEMENT



OPEN BOOK TEST 1

DATE: 09.04.2017

TIME: 1.00 p.m. – 2.00 p.m.

Answer all the questions Answers should be written within the spaces provided in the question paper.

1. State two advantages contribute to organisms by the property of high specific heat of water.

(i)

(ii)

2. What is the method of origin of the Great Lakes in North America?

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What is the type of lakes formed when the subsurface mineral deposits dissolve?

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3. Why is the carbonate buffering system important for aquatic life? How does it work?

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4. What can you say about the depth of the euphotic zone of a eutrophic lake when compare with that of an oligotrophic lake. Explain your answer.

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If the secchi depth value of a lake is 2.3 meters, calculate the depth of the euphotic zone of that lake.

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5. The A and B lakes shown in Figure 1 are with approximately similar volumes and depths.

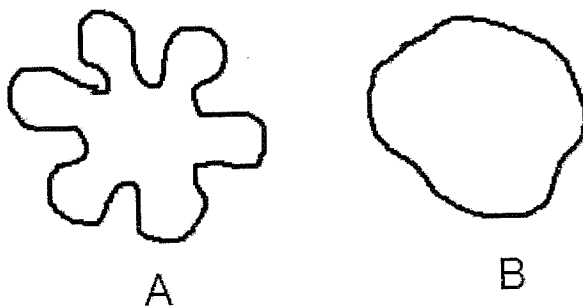


Figure 1

Which one of the two will be affected more by the surrounding land through runoff or groundwater leaching?

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Briefly explain the reason for your answer.

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6. In the history, it was reported that one sacred place was situated towards north to the river flowing nearby. In the present, the same sacred place is situated towards south to the same river. Can the history report be a true one? If you accept that it is a true report, how can you explain this situation?

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7. Temperature and oxygen curves of two lakes (A & B) are shown in the Figure 2.

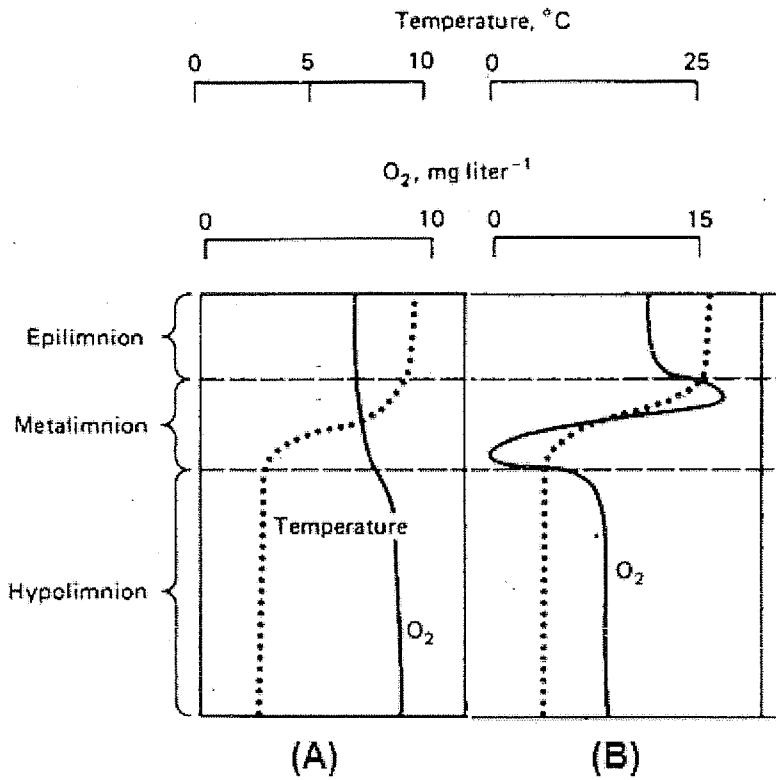


Figure 2

Explain the oxygen curves of Lake A.

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What are the possible reasons for the rapid increase and the sharp decrease of O₂ content in the metalimnion of Lake B?

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8. Explain how rivers continue to flow during long droughts.

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9. When prawn farms were made in the mangrove areas, the soil on the walls of the pond exposed to air had red precipitates of ferric compounds. Explain the reason/s for the formation of red precipitate.

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10. High nitrate levels have been found in and around the main cities of Sri Lanka. What can be the reason for this?

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11. Due to the ignorance of the services available from wetlands, most people consider them as wastelands. State **three** important services provided by wetlands.

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State **three** types of threats faced by the wetlands in the coastal areas.

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12. Why is conservation of riverine marshes (villues) important?

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13. Humans often change the natural water regimes in order to maximize its utilization. State **three** ill-effects of these alterations.

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14. What is eutrophication?

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State **four** causes that were responsible for the eutrophication of Kotmale reservoir in 1991.

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Briefly explain **four** methods that can be used to control eutrophication in a lake.

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15. State **four** drawbacks in legislations that maintain water resources in Sri Lanka.

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State **four** important objectives of the new National Water Resource Policy.

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Do you think that a National Water Resource Policy is required for our country? Give **two** reasons to justify your view.

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