KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2017

Marks Scored:

Level : B.Sc./B. Tech.
Year : II
Course : ENVS 211
Semester : I

Exam Roll No. :
Time : 30 mins.
F. M. : 20

Registration No. :
Date : MAR 2 7 2017

SECTION "A"
[20 Q. × 0.5 = 10 marks]

Circle the most appropriate answers.

1. Which of the following connects two patches in a landscape?
   a. Matrix b. Ecotone c. Corridor d. Community

2. The food chain starting with dead organic matters is called
   a. Detritus food chain b. Aquatic food chain
   c. Grazing food chain d. Dead food chain

3. An ecosystem is formed by
   a. Landscapes b. Communities c. Biomes d. Ecospheres

4. The meaning of *TROPHE* is
   a. Production b. Consumption c. Digestion d. Nourishment

5. The sequence of a community that replace one another is termed as
   a. Sere b. Pioneer c. Climax d. Autogenic

6. The pioneer stage of succession can be represented by one of the following terms
   a. $P > R$ b. $P = R$ c. $P < R$ d. $P \neq R$

7. The individuals of the same species competing for resources is termed as
   a. Inference competition b. Exploitation competition
   c. Intraspecific competition d. Interspecific competition

8. When a population produces a substance harmful to a competing population it is termed as
   a. Predation b. Parasitism c. Herbivory d. Allelopathy

9. Favorable habitats surrounded by unfavorable habitat are
   a. Matrix b. Patches c. Corridors d. Ecotones

10. The physical parameter that plays vital role on thermal stratification of lakes is
    a. Light b. Temperature c. Precipitation d. Humidity

11. A lake with high nutrients is termed as
    a. Oligotrophic lake b. Mesotrophic lake
    c. Eutrophic lake d. Meso-eutrophic lake

12. There is a slow (or negative) population growth when maximum proportion is present in the category
    a. Reproductive age
    b. Post-reproductive age
    c. Pre-reproductive age
    d. None of the above

13. Which is one of the characters of k-selected organisms?
    a. Fastdevelopment
    b. Manyoffspring
    c. Long life time (>1 year)
    d. Early reproduction

14. Which of the following is a **density-dependent** population regulation mechanism?
    a. Predation
    b. Flood
    c. Temperature
    d. Precipitation

15. Vulture is one of the examples of
    a. Autotrophs
    b. Carnivore
    c. Herbivore
    d. Scavengers

16. Middle layer in a lentic water body acting as a barrier to exchange of materials is
    a. Thermocline
    b. Epilimnion
    c. Hypolimnion
    d. Benthic

17. Which of the following is NOT a bio-indicator?
    a. Birds
    b. Macro-invertebrates
    c. Pesticides
    d. Zooplankton

18. What is the general range of conductivity in natural freshwaters?
    a. 0 – 10
    b. 10 – 1000
    c. 100 – 10000
    d. 1000 – 100000

19. Which type of survivorship curve does human belong to?
    a. Type I
    b. Type II
    c. Type III
    d. Type IV

20. Which of the following regions indicate bottom area of a lake?
    a. Littoral
    b. Limnetic
    c. Benthic
    d. Epilimnion

SECTION "B"

[20 Q. × 0.5 = 10 marks]

21. Group of species with comparable roles and niche dimensions within a community are _____.

22. Species distributed widely develop locally adapted population called _____.

23. Organisms too small to capture by plankton net are termed as _____.

24. The maximum rate of population growth in Sigmoid curve is_____.

25. Nitrogen fixing bacteria in the node of legumes is an example of _____.

26. The interaction between two species where both get benefit but there is no obligation is called _____.

27. In uniform environment, the dispersion pattern of individuals in a population is _____.

28. A definite area where individuals, pairs or family groups restrict their activities is called _____.

29. The permanently frozen deeper soil is _____.

30. The application of ecological theory to restore highly disturbed sites or ecosystems is called _____.

31. The terminal or mature stabilized stage of an ecosystem is called _____.

32. _____ is the joint evolution of two or more non-interbreeding species.

33. Biosphere-2 is an example of _____.

34. _____ use light energy and simple inorganic substances to produce complex organic substances.

35. Species distributed widely develop locally adapted population called _____.

36. The conversion of ammonia to nitrate/nitrite is called _____.

37. _____ food chain starts with green plants.

38. The ratio of N/P in average biomass is _____.

39. "Growth of a plant is dependent on the amount of food stuff which is presented to it in minimum quantity". This is called _____.

40. The climax condition controlled by the topography and local microclimate is called _____.

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SECTION "C"

[3Q. × 7 = 21 marks]

Answer the following questions (*ANY THREE*).

1. Explain an aquatic or a terrestrial ecosystem with examples.

2. What is a wetland indicator? Explain different kind of indicators in wetlands.

3. Describe ecological succession with examples.

4. What is biogeochemical cycle? Describe nitrogen or carbon cycle with a labelled diagram.

SECTION "D"

5. Distinguish between (*ANY TWO*) [2Q × 4 = 8]
   a. Parasitism and predation
   b. Patches and corridors
   c. Grazing food chain and detritus food chain

6. Write short notes on [4Q × 4 = 16]
   a. Abiotic and biotic factors
   b. Limits of tolerance concept
   c. Biological clock
   d. ∫-shaped (sigmoid) population growth form

7. Give reasons [2Q × 5 = 10]
   a. r-selection organisms allocate more energy on reproduction compared to maintenance efforts.
   b. Pyramid of number in parasitic ecosystems and pyramid of biomass in aquatic ecosystems are inverted.