

KATHMANDU UNIVERSITY  
End Semester Examination  
March/April, 2017

Marks Scored:

Level : B. Sc.  
Year : IV

Course : ENV5 413  
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date APR 07 2017

SECTION "A"

[17 Q.  $\times$  0.5= 8.5 marks]

Choose and mark (X) against the correct answer:

1. Urban watersheds have  
 high Bowen's ratio and high rates of evapotranspiration  
 high Bowen's ratio and low rates of evapotranspiration  
 low Bowen's ratio and low rates of evapotranspiration  
 low Bowen's ratio and high rates of evapotranspiration
2. Formulation of policy documents during urban planning is consistent with  
 intelligence function  problem solving  
 advance planning  development management
3. Urban areas have  
 high albedo and high Bowen's ratio  high albedo and low Bowen's ratio  
 low albedo and high Bowen's ratio  low albedo and low Bowen's ratio
4. Population change on the earth is affected only by  
 immigration and emigration  birth rate and death rate  
 immigration and birth rate  emigration and death rate
5. A prominent commercial settlement in Kathmandu Valley during the 10<sup>th</sup> century was called a  
 "Sahar"  "Dranga"  "Nagarpalika"  "Tole"
6. Provision of sanitation and water supply in urban areas is categorized as  
 amenity benefit  convenience benefit  
 environmental benefit  health and safety benefit
7. In the equation,  $(P + Ra) - (ET + Ru) = \Delta S$   
The inflow of water system in urban areas is represented by  
  $(P + Ra)$    $(ET + Ru)$   
  $(P + Ra) / (ET + Ru)$    $(ET + Ru) / (P + Ra)$
8. In the equation,  $(P + Ra) - (ET + Ru) = \Delta S$   
The outflow of water system in urban areas is represented by  
  $(P + Ra)$    $(ET + Ru)$   
  $(P + Ra) / (ET + Ru)$    $(ET + Ru) / (P + Ra)$
9. National Ambient Air Quality Standard in Nepal was introduced in  
 2003 AD  2005 AD  2010 AD  2012 AD

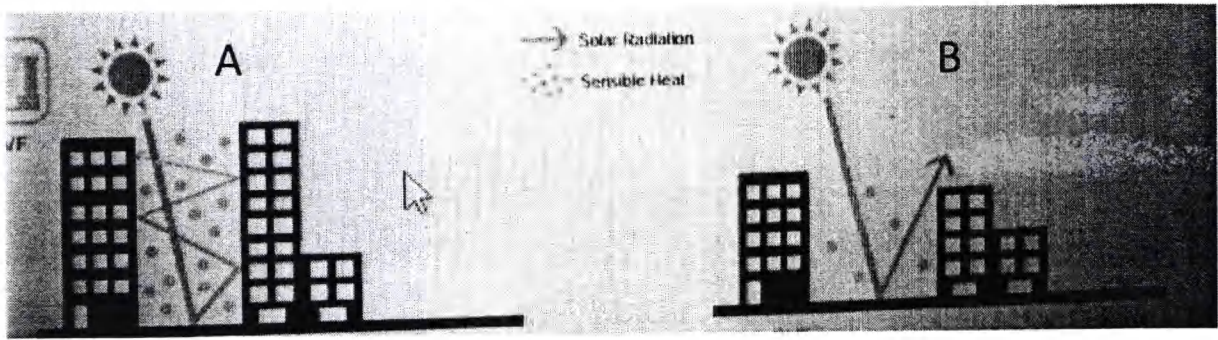
10. Phytoremediation occurs in  
 detention ponds  retention ponds  
 collecting pipes  distributing pipes
11. Which of the following statement is false about urbanization?  
 Urbanization is an essentially demographic phenomenon  
 Urban people are involved in non-agricultural activities  
 Urbanization induces innovations  
 Urbanization cannot occur when a city is already urbanized
12. A nation with an urn-shaped pyramid has a  
 large proportion of old age individuals and less proportion of young individuals  
 large proportion of old age individuals and large proportion of young individuals  
 Less proportion of old age individuals and less proportion of young individuals  
 Less proportion of old age individuals and large proportion of young individuals
13. Which of the following statement is correct?  
 Detention ponds store water temporarily  
 Detention ponds store water permanently  
 Phytoremediation occurs in detention ponds  
 Detention ponds are also referred to as wet pools
14. Agricultural intensification is characterized by  
 a high fallow ratio with intensive use of inputs  
 a high fallow ratio with minimal use of inputs  
 a low fallow ratio with intensive use of inputs  
 a low fallow ratio with minimal use of inputs
15. "Moonshine" houses are slum houses in  
 India  Ethiopia  
 North America  South America
16. Improvement of the lives of the slum dwellers by 2020 is consistent with MDG  
 1  3  5  7
17. Which of the following is the most urbanized area in Nepal?  
 Mahendranagar  Kathmandu Valley  
 Pokhara  Birgunj

SECTION "B"

[3Q × 0.5 = 1.5 marks]

APR 07 2017

18. Consider the following figure and answer the given questions



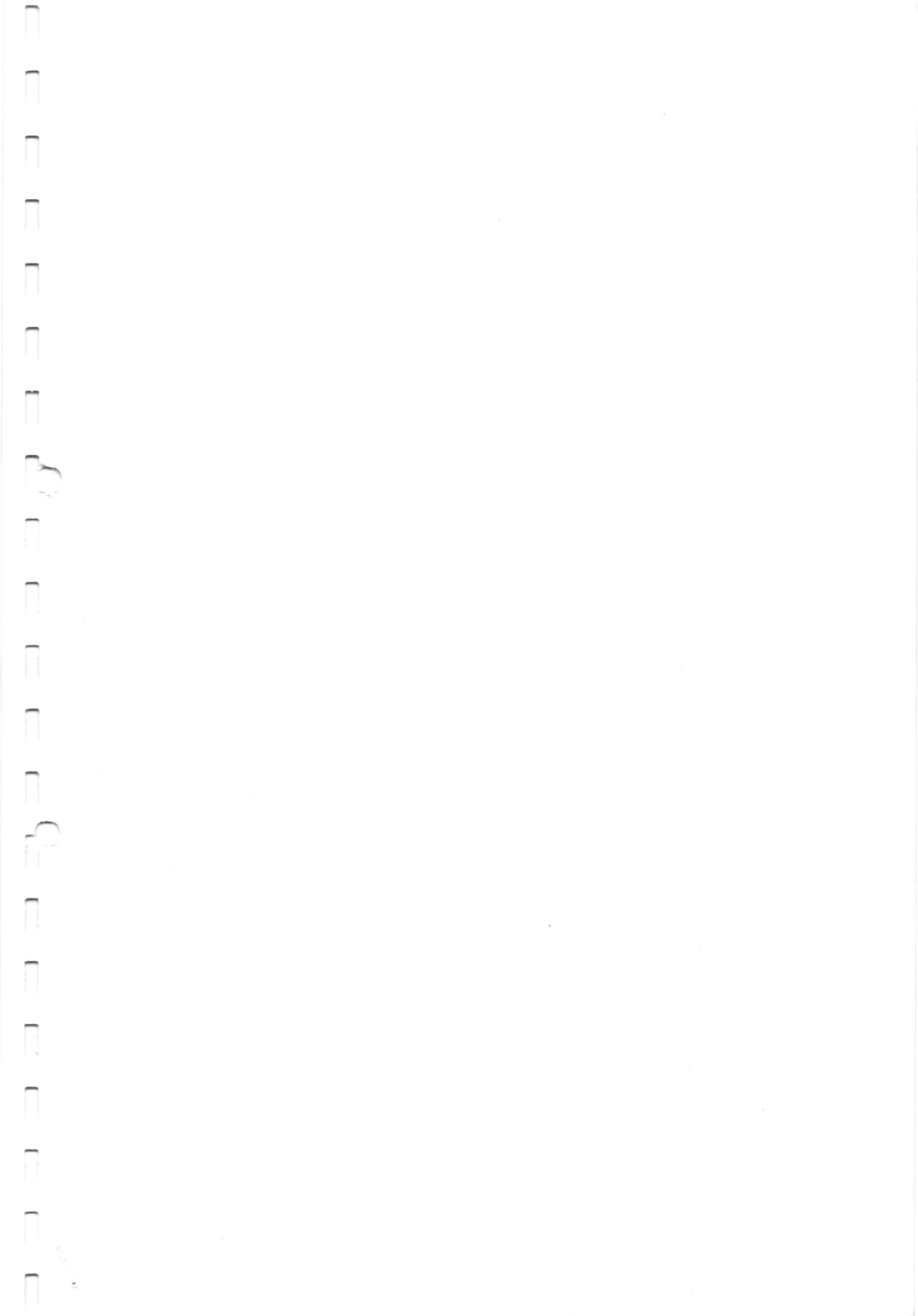
- a. SVF is higher in site  
[ ] A [ ] B
- b. Which of the two sites would be cooler?  
[ ] A [ ] B
- c. Impingement and absorption of sunlight is higher in  
[ ] A [ ] B

SECTION "C"

[10 marks]

Fill in the blanks:

- 19. One Child Policy was introduced in \_\_\_\_\_.
- 20. The ratio of the number of unproductive individuals to productive individuals is referred to as \_\_\_\_\_.
- 21. The unit of solar radiation is \_\_\_\_\_.
- 22. The mass of air present between the ground and roof level to the top of the trees and buildings in urban areas consists the \_\_\_\_\_.
- 23. The full form of SVF is \_\_\_\_\_.
- 24. Phytoremediation involves \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
- 25. The four phases of demographic transition are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
- 26. The first sub-metropolitan city in the far western region of Nepal is \_\_\_\_\_.
- 27. An increase in the concentration of greenhouse gases leads to an increase in the magnitude of the greenhouse effect is called \_\_\_\_\_.
- 28. Excessive groundwater extraction in coastal areas results in \_\_\_\_\_.
- 29. The full form of NDWQS is \_\_\_\_\_.
- 30. The highest tractor traffic in South Asia is seen in \_\_\_\_\_.
- 31. The total number of Sustainable Development Goals is \_\_\_\_\_.
- 32. The World Health Day theme for 2010 was \_\_\_\_\_.



Level : B. Sc.  
Year : IV  
Time : 2 hrs. 30 mins.

Course : ENVS 413  
Semester : I  
F. M. : 55

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SECTION "D"

[3 Q. × 7 = 21 marks]

Answer the following:

1. Give an account of the different issues and challenges in urban transport system. Add a note on how these challenges can be tackled.
2. Describe the different types of cool roofs and their role in mitigating urban heat island effect.
3. Describe the hydrological impacts of urbanization. Add a note on Urban Stream Syndrome.

SECTION "E"

4. Write short notes on : [4Q × 3 = 12]
  - a. Megacities
  - b. Intensive and extensive green roofs
  - c. Urban canyon geometry
  - d. Benefits of urban planning
5. Differentiate between : [4Q × 3=12]
  - a. Phytodegradation and phytoextraction
  - b. Primitive population stability and modern population stability
  - c. Push factors an pull factors of migration
  - d. Urbanization and counter-urbanization
6. Give reasons why (*ANY FOUR*) [5Q × 2=10]
  - a. Demography is important for planning
  - b. Urban residents suffer from double burden of diseases
  - c. Developing nations are characterized by population pyramid with a broad base
  - d. Pollutant concentration occurs rapidly in urban areas
  - e. Car-oriented transport development patterns is not considered sustainable

