Environmental Science and Technology

(Quiz-1)

Time: 45minutes *Total Marks: 20*

Answer the following

1. Define (a) Ecology (b) Biomagnification (2 marks)
2. What is (a) Utilitarian conservation (b) Cornucopians Thought? (2 marks) optimistic
3. Given an account of (a) Ecological foot print (b) Eutrophication (10 marks)
4. Describe the factors (assume) that might have led to the formation of Thar desert of Rajasthan **or** Explain with an example how water diversion cause serious environmental problem.(6 marks)

Mid Semester Exam

18th September 2019

Environmental Science and Technology

Time: 90minutes

Total Marks: 40

Note: If need, make Suitable assumptions and state it clearly when answering

Part I. Fill in the blanks **20*0.5=10**

1. *The evidence to support Alvarez hypothesis about Dinosaur extinction comes from K-Pg Layer, which contains high amount of ----metal*
2. *An example of key stone species ----.*
3. *The study of IARI found that an increase in temperature by about ------ Centigrade has impact on wheat yield in most places of India.*
4. *----and ----are examples of allogenic ecosystem engineers*
5. *Blast fishing has major impact on ----------ecosystems*
6. *----------are the oldest direct evidence of life on earth*
7. *----------hypothesis is counter premise to the Snow ball Earth hypothesis*
8. *----------and ----------are the areas most affected by defaunation*
9. *RCP 8.5: characterized by increasing ----------over time*
10. *Climatically, the development of an El-Nino brings ----- to the western Pacific, ----- to the equatorial coast of South America, and convective -- ----- to the central Pacific.*
11. *Match the following*

Source Material	*Pollutant*
a. Pipe Insulation	*1. Methyl chloride*
b. Furniture	*2. Chloroform*
c. Air fresheners / moth balls	*3. Mold, bacteria*
d. Paint stripper / thinner	*4. Para dichloro benzene*
e. Heating and cooling ducts	*5. Asbestos*
f. Paper and Pulp mills.	*6. Formaldehyde*

Part II. Answer the following

1. *Short account on –*
   a. Gray goo (or) Dooms Day clock **2*3=6**
   b. Toba catastrophe theory (or) Black Swan theory
2. *Draw - Models of ecological energy flow (or)* **1*2=2**
   The climate machine (Forcing and Response)
3. *Explain the scientific phenomenon behind* **1*4=4**
   Super cooling of Earth and formation of ice caps
   (or) The 1984 Ethiopian famine
4. *Describe- Ecological Pyramids (or) Nitrogen cycle* **1*4=4**
5. *Explain in detail – Different ventilation measurements (or)* **1*6=6**
   Gaia (definition, hypothesis, attributes)
6. *Explain the impact of climate change on* **1*8=8**
   Plant diversity (or) Sunderban forest ecosystem

End Semester Exam

20th November, 2019

Environmental Science and Technology

Time: 180 minutes

Total Marks: 90 100.

Answer the following

I. ***Remote sensing applications*** **(6)**

1. Define Remote sensing 1
2. How vegetation and deeper water bodies appear in infrared composite satellite data? 2
3. List any Six applications of remote sensing technology in environmental studies. 3

I could list only 4.

II. ***Carbon Sequestration – Vegetation*** **(10)**

1. If the dry biomass of a tree is 2 tonnes, then it contains around 0.5 tonne of carbon 0.5
2. 40 % of carbon is found in tundra and boreal forest ecosystems 0.5
3. What are Riparian forest buffers? 0.5
4. (a) Differentiate between afforestation and reforestation? 1.0
   (b) What is Agroforestry? Why it is an attractive option for carbon mitigation? 3.5
5. In natural forests, there is a net addition to standing biomass leading to carbon storage only until maturity – why not later? 2.0
6. Describe any one international carbon sequestration project? 2.0

III. ***Carbon Sequestration – CDM*** **(12)**

1. Expand (a) IPCC (b) CDM (c) UNFCCC (d) COP (e) CER (f) GWP 3.0
2. Give a short account on Kyoto Protocol (2m), with emphasis on its mechanisms for Emission reduction? (3m) 5.0
3. Brief (3-4 points) any two projects eligible under CDM. 4.0

IV. ***Carbon Sequestration – Ocean*** **(12)**

1. Explain (a) Iron Hypothesis (b) Urea fertilization and its impact (c) Carbon storage in coal beds (d) Novacem as ecofriendly cement [2+4+3+3] 12.0

V. ***Environmental Impact Assessment*** **(10)**

1. 1 A mining company has been operating for about 4 yrs in a coastal region. The mining activity of the company is very intense. This company has effectively implemented its EMP with great success, mitigating the environmental impacts caused by this activity. Up to date the results of the environmental auditory show up that this company completely fulfil all the legal requirements, laws and environmental standards established by the authorities. Since 1 yr this company is part of a trial against the community, which argues that after the company has started its mining activity in the zone, the quality of the water has been significantly deteriorated and that this company is operating in a protected area. The Company argues that it has relevant proofs in order to demonstrate that they have not polluted the environment but the others industries located in the zone. The mining company emphasizes that when they began the activities the environment was already polluted specially the water and that the quality standards of the water were not good at all.

   Baseline.

   a. What document the mining company must present in the trial in order to demonstrate its argument that the environmental quality was already deteriorate before their activities began in the zone. Why is this document so important? Explain?

   preliminary report.

$N_2O \equiv 300 \times CO_2$

Amnesiac, Paralytic

b. What document the mining company should have obtained in order to get its environmental license demonstrating that they are not located in a protected area. What is the name of the institution that issues this document?

c. Mention 2 environmental impacts this company might cause into the environment and 2 ways to mitigate this impacts that should be included in its EMP.

VI. ***Green Computing*** **(10)**

1. List the approaches of Green computing? 2.0
2. Give four differences between thick and thin clients? 4.0
3. Describe any two computers defined on sustainable concept of green computing 4.0

VII. ***Green Engineering*** **(7)**

1. How Denim manufacturing impacts the environment? 4.0
2. List any six principles of green engineering? 3.0

VIII. ***Green Accounting*** **(17)**

1. What is SNA? Define its framework? Why the concept of SNA remained so popular for longer time? (2+2+6) **OR**
   What is SEEA? How it is different from SNA? How natural assets are classified in SNA and SEEA? (2+2+6) 10.0
2. Explain surrogate market approach methods with examples? 3.0
3. What is Sustainable development defined by WCED (1987) ? 1.0
   How is weak sustainability related to Green Accounting ? 3.0

IX. ***Environmental Movements, Ethics, Legislation*** **(13)**

1. List any 4 environmental movements with their location. 2.0
2. What is Green tax? 1.0
3. List any four environmental legislation (Acts, Rules, Amendments) 2.0
4. What is Ramsar Convention? List any three Ramsar sites of India with their locations 5.0
5. Differentiate between three approaches of environmental ethics? 3.0

X. ***Class Presentations*** **(3)**

1. Answer any one of the following (one should not choose their own topic)
   (a). Algal fuel (b) Equator Principles (c). Blue carbon 3.0