

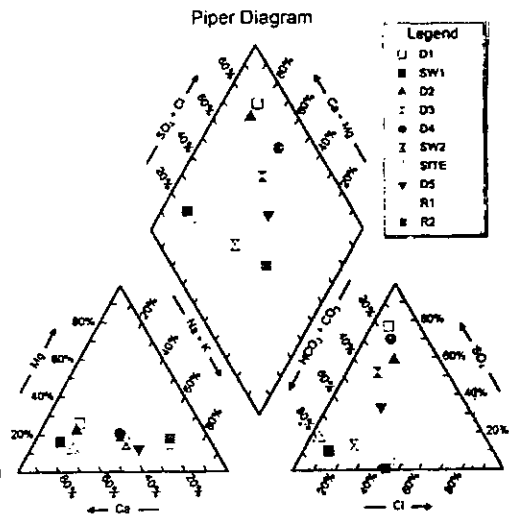
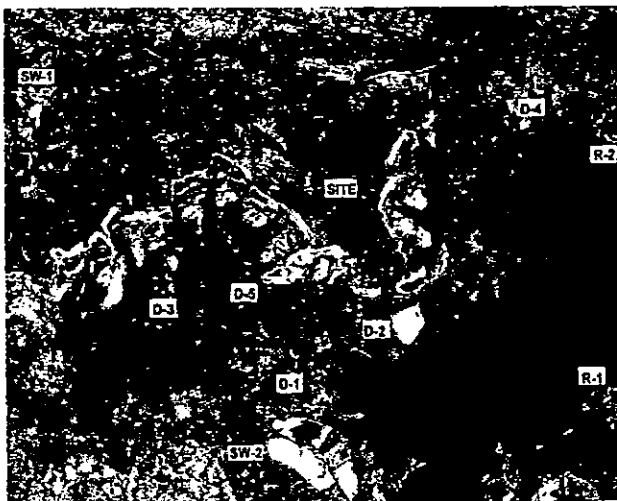


3. What are bio-degradable plastic ?
- (a) They are starch based plastics with long polymer molecules that can be broken apart by decomposer organisms.
  - (b) They are plastics whose components are derived from renewable raw materials.
  - (c) They are plastics whose components can be recycled.
  - (d) They are plastics produced from basically cane sugar or glucose.
4. Which of the following has not been identified as a biodiversity hotspot ?
- (a) Carribean Islands
  - (b) Western Ghats
  - (c) Western Himalaya
  - (d) Mediterranean Basin
5. With reference to global warming trends :
- (I) There has been widespread retreat of mountain glaciers in non-polar regions during the 20<sup>th</sup> century.
  - (II) Since 1950 there has been increase in the frequency of extreme low temperatures, with a smaller decrease in the frequency of extreme high temperatures.
  - (III) Temperatures have risen during the past 4-5 decades in the lowest 8-km of atmosphere.

Which of the following are true :

- (a) Only I
- (b) Only I and II
- (c) Only I and III
- (d) All of the above

6. Vegetation near thermal power plants that do not have efficient pollution control systems could develop bleaching of leaf pigments. This is mainly due to the release of :
  - (a) Methane
  - (b) Sulphur dioxide
  - (c) Hydrogen sulphide
  - (d) Carbon monoxide
  
7. What do TOR, SEIAA, CRZA, IUCN stand for ?
  
8. Give two examples of species invasion and two new species found after green revolution.
  
9. What is the limit for emission of Particulate Matter for new Cement plants and those that are situated in critically polluted areas ?
  
10. What is Red Book ? Mention first four groups of the Red List.
  
11. (a) The satellite image of Jamshedpur area is given below on which location of project site and water samples collected. The data is plotted on Hill-Piper diagram. Classify the hydro-chemical facies and the quality of water for these locations. What does sample acronym D, R and SW suppose to stand for ? Justify your view. (5+12)



(b) Given below is the land use / land-cover classification for this area :

Class	Forest	Crop Land	Fallow Land	Plantation/ Vegetation	Human Settlement	Dump Waste	Scrub Land	Open Land
% Area	10.21	9.84	16.64	10.49	6.65	8.33	5.51	7.83

On the given satellite image, are all the classes present in this classification, give reasons ? If not then which classes are missing ?

What type of project is most beneficial at this site ? Support it with the general geology of the area. Comment on the changes in the land use and the quality of the water, if the project at this site is constructed. Which portion will be most affected due to air pollution after construction of the project at this site, justify it.

**SECTION – B (Any 4 Questions)**

**(48)**

*All questions carry equal marks, i.e. 12 marks each.*

12. Explain briefly the factors affecting soil formation drawing a neat and labelled sketch of soil in arid region. Mention any 2 zones of high soil erosion in India. What methods can be taken for prevention of soil erosion.
13. Give the main features of Environment Protection Act, 1986 emphasising on the penalties involved. Explain the “Polluter Pays Principle” and the “Absolute Liability Principle” citing reference examples.
14. (a) Giving examples, explain habitat destruction and fragmentation.  
(b) How is scoping different from staging ? Explain with example.
15. What do you understand by EIA and EMP. What is the procedure to get the environmental clearance from MoEF in India ? Explain in detail with flowchart ?
16. At what level, detailed baseline study is required while making EIA ? For a mining project in Indian scenario, what inputs can you give as a geologist ? Support it with Indian examples.
17. Define landuse/land cover classification. Write the classes upto level III for any 4 classes. Describe any two types of classifiers with their advantages and disadvantages.