

## PART- I

**Do not mix up answers of Part-I and Part-II**

### **Answer to the point**

**Assume any data if necessary**

**Answer any two questions from part-I**

1. Draw the conventional water treatment flow diagram considering surface water as source and mention the functions of each and every unit of operation. (7.5)
  2. What is turbidity? How is it measured? Mention impact of turbidity and engineer's interest. (1+1.5+5=7.5)
  3. What is alkalinity? Mention the species responsible for alkalinity in natural water systems? Mention the importance of alkalinity in water and wastewater treatment. (1+1.5+5=7.5)

Part-II

**Answer briefly to the point. Answer should not be more than 2 lines for each short question**

**Answer any 2 from the following:**

1. (a) Define sustainable development (SD) and mention 2 SD goals related to environment and ecology (b) Why does IPCC want to control global CO<sub>2</sub> emission and which country is responsible for maximum per capita release of CO<sub>2</sub>? (c) What is WCED and what is the “name” of the report of WCED published in 1987? (d) Mention two major environmental impact of deforestation (e) Give an example of “green energy” with very low carbon emission (f) Give an example of a chemical responsible for bio-accumulation (mention the full name)

(2+1.5+1+1+1=7.5)

2. (a) What is Pedosphere? Mention 2 major beneficial functions of pedosphere (b) Write down the generic reaction of burning of coal mentioning at least 4 major species of emissions other than CO<sub>2</sub>(c) What forms the basis of food chain? Mention an example of “basis” in marine food chain. (d) Write one example each for “Ecotone” and “Edge Effect” (e) What is “Detrivores”? Give an example (f) What is “Benthos”? Give an example

(2+1.5+1+1+1=7.5)

3. (a) What is an “Endergonic” reaction? Give an example of natural “endergonic” reaction (write down the reaction) (b) Mention the geographical location of tropical rain forest, write two major environmental factors that help formation of rain forest (c) What is zooxanthellae? Where is it found? (d) What is Permafrost? Where is it found?(e) What is “Xerophytes”? Mention an important adaptation of Xerophytes (f) Give an example each of In-situ and Ex-situ method of conservations

(2+1.5+1+1+1=7.5)