**EV20001, Springn 2019**

**Topics Covered and Model Questions (MidSem)**

**(General, Sustainable Dev, Water Pollution and Wastewater Treatment)**

(1) What is the name of the law governing water pollution in India? How do you define ‘water pollution”? MAJOR water pollutants, their sources and effects.

(2) Define: BOD, COD, DO. Recalcitrant Organic Compounds, Persistent Organic Pollutants (POP’s), examples and effects.

(3) What may be the major sources of nitrate and phosphate in a water body? How do they affect the water quality in a water body? What are eutrophic, oligotrophic and mesotrophic water bodies?

(4) Give two examples of non-point sources of water pollution. Which one is less difficult to manage?

(5) Write down the structure of polychlorinated biphenyl? What was its major use? Why has it been banned? Name four POP’s and their uses before these were banned? How does a POP bioaccumulate?

(6) What is the name of the book Rachel Carson wrote? What was the message. Do you know any dissenting voice about the effects of POP’s on the living world?

(7 Name and briefly discuss the four towering principles that are the basis of most of today’s environmental laws, Polluter Pays Principles (PPP) and Prevention Principles (PP). What are Agenda 21? Why are they so called?

(8) What are the major sources of pollution of ground water? Briefly describe the ‘pump-and-treat’ method of decontamination of ground water. How do hydrocarbons and trichloroethylene appear in ground water

(9) What are the major pollutants removed during municipal waste water treatment? Briefly discuss the principles and steps of municipal wastewater treatment.

(10) Mention five major water quality parameters? What is the range of BOD, COD and TSS allowed in treated wastewater before discharge into a natural water system?

(11) What are (i) Coliform bacteria, (ii) Gram negative bacteria and (iii) facultative bacteria? What is the acceptable level of Coliform in water bodies?

(12) Write down four essential features of National Environment Policy (NEP), 2006?

(13) Briefly describe Ganga Action Plan, NGRBA and NMGC. What water quality of the Ganga is targeted under the initiative of cleaning the river?

(14) What do you mean by ‘Sustainable Development’? Who coined this name and when? In which global meets did this concept get prime importance?

(15) Write down any ten of the seventeen UNEP goals (SDG/s} of sustainable development. What is the time frame of achieving these goals?

(16) What are the causes of marine pollution? Cite two examples of disastrous marine pollution.

(17) What are the roles of the State and the Citizens stated in the Indian Constitution?

(18) What are the regulatory bodies responsible for ensuring compliance of the environmental laws and rules.

(19) What is the environmental Kuznets curve? Explain by a sketch.

(20) What is the function of a flow equalization tank?

(21) Describe the technique of BOD removal using a trickling filter. What is tertiary treatment? What are the contaminants removed by tertiary treatment and how?

(22) Simple calculations involving BOD rate constant (*kd*), BOD5, secondary treatment and volume of treatment tank/