Register No.: …… Name: ……..

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

THIRD SEMESTER B.TECH DEGREE EXAMINATION (S), MAY 2022
COMMON TO ALL BRANCHES
(2020 SCHEME)

Course Code: **20MCN201**

Course Name: **Sustainable Engineering**

Max. Marks: **50** **Duration: 2 Hours**

PART A

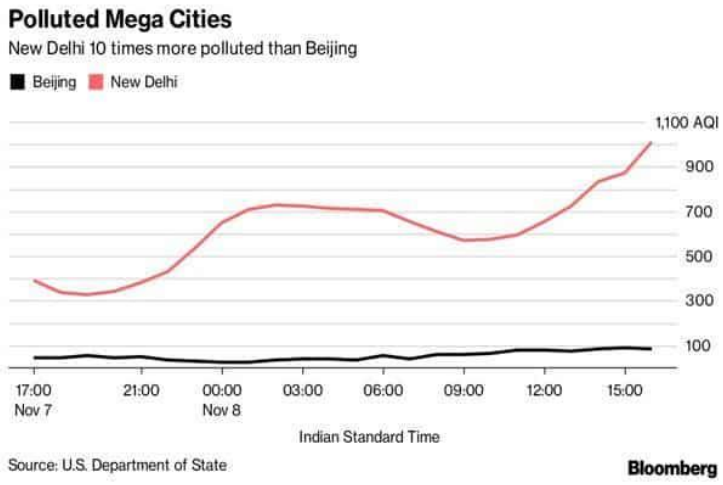
(Read the Stories/Cases/Data set as the case may be, and answer ALL questions. Each FULL question carries 10 Marks)

1. Since the outbreak of COVID-19, medical waste generation is increased globally, which is a major threat to public health and environment. For sample collection of the suspected COVID-19 patients, diagnosis, treatment of huge number of patients, and disinfection purpose lots of infectious and biomedical wastes are generated from hospitals. For instance, Wuhan in China produced more than 240 metric tons of medical wastes every day during the time of the outbreak, which is almost 190 metric tonnes higher than the normal time. Again, in the city of Ahmedabad of India, the amount of medical waste generation is increased from 550-600 kg/day to around 1000 kg/day at the time of the first phase of lockdown. Recently, huge amount of disinfectants is applied into roads, commercial, and residential areas to exterminate SARS-CoV-2 virus. Such extensive use of disinfectants may kill non-targeted beneficial species, which may create ecological imbalance

   a) What are the positive and negative environmental impacts of covid-19 (5)

   b) Explain any two potential strategies of environmental sustainability for the above mentioned case. (5)

2.



Air quality index of Delhi and Beijing is shown in the graph. Delhi residents were exposed to air that does not meet the National Ambient Air Quality Standards (60 µg/m^3).

a) Identifying priority areas of interventions needed in controlling air pollution in Delhi (5)

b) Describe the effects of air pollution (5)

3. a) What you mean by bio mimicking? Explain with suitable examples. (5)

b) What are the various steps in environment impact assessment? Explain. (5)

4. How does a fuel cell differ from a normal battery? Explain the working of a fuel cell with a simple sketch (10)

5. What are the importances of sustainable cities in the present circumstances? Explain with an example. (10)

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