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SEAT No. _____

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Sardar Patel University

External Examination, 2019

M.Sc. (Environmental Science and Technology), 4th Semester

Date: 18th March, 2019, Time: 02:00 pm to 05:00pm

Subject code: PS04CEST21

Title: Waste Management and Control Technology

N.B: Draw neat and labeled diagrams, wherever necessary.

Total Marks: 70

Q.1. Choose the correct option.

(8X1=8)

1. Cytotoxic should be placed in which container?
(a) Yellow container (b) Grey container (c) Black container (d) Blue container
2. The term Municipal Solid Waste (MSW) is generally used to describe:
(a) Wastes from industrial processes, construction and demolition debris
(b) Wastes from Private homes, commercial establishments and institutions (c) Mining wastes
(d) Agricultural wastes
3. The following Nanoparticles are used to absorb the UV light.
(a) Silicon (b) Iron (c) Tungston (d) None
4. Form-9 covers _____ documents concerned with illegal traffic of HW.
(a) Import (b) Legal (c) Export (d) Movement
5. As per EPA definition, hazardous waste is waste that is:
(a) Ignitable, corrosive, reactive, and toxic. (b) Medical waste disposed of improperly
(c) Ignitable, explosive, toxic, and dangerous (d) Reactive, corrosive, toxic, ignitable, and non-regulated
6. Nanoparticles of sulfate aerosols formed from
(a) Terpenes (b) Tannins (c) Alkoloids (d) None
7. What is the most expensive component of solid waste handling?
(a) Collection (b) Storage (c) Treatment (d) Separation
8. The waste plastics are converted into liquid fuel by theprocess.
(a) Pyrolysis (b) Cracking (c) Hydrolysis (d) Incineration

Q.2. Write a short note on following (Any Seven).

(7X2=14)

1. Characters of Nanoparticles
2. Composting
3. Curb and Alley system
4. Expand: BDAT, UTS
5. Landfill Liners
6. Types of Nanomaterials
7. Waste category of BMW
8. Waste generation of SW
9. Wasting resources and Graphical Representation of Waste disposal methods

Q.3. A) What are the different types of the solid waste? Describe the collection systems in detailed with diagram. (6)

Q.3. B) What do you mean by the processing of SW? Describe material recovery by Mechanical and Thermal conversion product process of SW. (6)

OR

B) Define leachate. Describe the control of gases and leachate movement in the landfill site. (6)

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(P.T.O.)

Q.4. A) How solid waste properties are changed at different stages with graphical representation. Write a note on Area and Trench Land filling methods for disposal of SW with proper illustration. (6)

Q.4. B) What are different Steps involved in the Management of Biomedical Waste? Write a note on Chemical disinfectant Technology of BMW. (6)

OR

B) Explain the different treatment and processing handling of E-waste. (6)

Q.5. A) Explain Biodegradation, Chemical reduction, Combustion, Deactivation, Macroencapsulation, Neutralization, Precipitation, Recovery of metals, Recovery of organics, Stabilization with suitable Examples. (6)

Q.5. B) Tabulate advantages and disadvantages of sanitary landfills, deep underground wells, and surface impoundments of HW. (6)

OR

B) Draw Flowcharts and Explain: Dealing with material use and wastes, Industrial ecosystem, and Benefits of recycling. (6)

Q. 6. A) Discuss the applications of nanoparticles in medicine and environment cleanup. (6)

B) Enumerate the characters, uses and properties of organic Nanoparticles. (6)

OR

B.i.) Explain the characters and properties of Silver and Iron Nanoparticles. (3)

B.ii.) Describe toxicological effects on any Three Nanoparticle studied by you. (3)

