

**THE CHARUTAR VIDYA MANDAL UNIVERSITY**  
**M.SC. ENVIRONMENTAL SCIENCE & TECHNOLOGY – SEMESTER IV**  
**APRIL, 2023 (REGULAR) EXAMINATION**

**Course Title: WASTE MANAGEMENT AND CONTROL TECHNOLOGY**

**Course Code:101350401**

**Total Printed Pages : 02(two)**

**Date: 18/04/2023**

**Time:10.00 am to 12.00 pm**

**Maximum Marks: 60**

**Instructions:**

- **Attempt all questions.**
- **Numbers to the right indicate full marks for each question.**
- **Make suitable assumptions wherever necessary.**

**Q.1 Answer the following multiple choice questions. (04)**

- (I) In the landfill sites, Phase V (Final Maturation) is identified by.....  
(a) High VOCs (b) lower the pH (c) lower rate of biological activity (d) higher Hydrogen.
- (II) Following in which services, the containers are placed at the alley line from where they are picked up by workers from solid waste collection vehicles who deposit back the empty containers.  
(a) Backyard (b) Alley (c) Curb (d) Set-Out services
- (III) \_\_\_\_\_ is an area, where polluting agents are continuously flying for a longer period of time.  
(a) Zone 18 (b) Zone 19 (c) Zone 20 (d) Zone 21
- (IV) The term 'Nanotechnology' was coined for the first time in \_\_\_\_\_.  
(a) 1974 (b) 1984 (c) 1994 (d) 2004

**Q.2 Answer in brief and to the Point (4 questions of 2 marks each) (08)**

- (I) Active Gas collection system
- (II) Mention the occurrence for Arsenic and Copper as E waste
- (III) Expand the term: RCRA, CERCLA, NPL, PPP
- (IV) Define: Nanotechnology, Nanoscience, Nanostructure, Nanomaterial

**Q.3 (a) Define MSW. Explain types of Collection system and services of MSW. (06)**

- (b) What is the need of Transfer station? Mention the different types of transfer station. (06)

**OR**

- (b) Describe the objective and process of Pyrolysis, Incineration and gasification in details. (06)

**Q.4 (a) How the waste property is changes for solid waste in the landfill. Mention the different methods for landfill. (06)**

- (b) Describe the different categories, segregations and treatment for BMW according to BMW rules 2016. (06)

**OR**

- (b) Explain the different methods for E-waste process and handling. (06)

**Q.5** (a) Define hazardous wastes. Briefly describe Characteristic HW and Listed HW. (06)

(b) Discuss Zonation System, Flammability Unit, Flash Point, and T Code. (06)

**OR**

(b) Explain advantages and disadvantages of burning wastes, burying wastes, sanitary landfill, deep well disposal, and surface impoundments. (06)

**Q.6** (a) Write a note on types and characteristics of nanomaterials. Add a note on carbon black, carbon nanotubes, and bucky balls. (06)

(b) Discuss various applications of nanotechnology in different scientific fields. (06)

**OR**

(b) Write a detailed note on nano particles in aquatic environment. Highlight the role of nanomaterials in atmosphere. (06)

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**M.SC. ENVIRONMENTAL SCIENCE & TECHNOLOGY – SEMESTER IV**  
**APRIL - 2023 (REGULAR) EXAMINATION**

**Course Title: ENVIRONMENTAL RESOURCES AND BIODIVERSITY CONSERVATION**

**Course Code: 101350402**

**Total Printed Pages : 01 (One)**

**Date: 20/04/2023**

**Time: 10.00 am to 12.00 pm**

**Maximum Marks: 60**

**Instructions:**

- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumptions wherever necessary.

- Q.1 Answer the following multiple choice questions. (04)**
- (I) Solar energy radiated from the sun is in the form of \_\_\_\_\_ waves.  
(a) Electromagnetic (b) Transverse (c) Infrared (d) None
- (II) The English word 'Forest' is derived from Latin word \_\_\_\_\_.  
(a) *Foris* (b) *Fortasse* (c) *Forte* (d) *Fortis*
- (III) To produce a biogas, \_\_\_\_\_ is put into airtight digester.  
(a) Colloids (b) Slurry (c) Suspension (d) Sludge
- (IV) When the last individual in a particular species dies, it is known as \_\_\_\_\_.  
(a) Speciation (b) Extinction (c) Succession (d) Adaptation
- Q.2 Answer in brief and to the Point (4 questions of 2 marks each) (08)**
- (I) Advantages of renewable energy
- (II) Enlist recommendations for using biogas
- (III) Minor Forest Produce (MFP)
- (IV) Conservation strategies
- Q.3 (a) What do you mean by photovoltaic effect? Explain various applications of solar energy. (06)**
- (b) What is the meaning for nuclear energy? Discuss different nuclear reactions in detail. (06)**
- OR**
- (b) What is biomass? Describe in detail the advantages and disadvantages of biomass energy. (06)**
- Q.4 (a) Write a detailed note on biogas technology at domestic and industrial scales. (06)**
- (b) How can we generate energy from the sea? Discuss. Add a note on household energy. (06)**
- OR**
- (b) Describe salient features of wind energy at a global scale along with advantages and disadvantages. (06)**
- Q.5 (a) What is biodiversity? Describe various types of biodiversity in detail. (06)**
- (b) In terms of biodiversity, India is a mega diverse nation. Explain. (06)**
- OR**
- (b) Elaborate the importance of biodiversity with examples. (06)**
- Q.6 (a) Discuss the characters used for forest classification. (06)**
- (b) Give an account on ethnobotanical uses of plants with suitable examples. (06)**
- OR**
- (b) Summarize various agroforestry practices in forested pockets of India. (06)**

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