

Seat No. _____

Enrolment No. _____

THE CHARUTAR VIDYA MANDAL UNIVERSITY

**M.Sc Environmental Science and Technology – SEMESTER 4
SUMMER (REGULAR) 2022 EXAMINATION**

Course Title: Waste Management and Control Technology

Course Code: 101350401

Total Printed Pages : 02

Date: 11/04/2022

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.

(12)

1. Which of the following is not considering as MSW.
a) Food waste b) Ashes and Residue c) Radioactive waste d) rubbish
2. Following is the cutting and tearing of the MSW.
a) Landfilling b) shredding c) composting d) Pulverization
3. Theanalysis is important in evaluating the combustion properties of waste
a) physical b) biological c) metal content d) proximate
4. The disposable wastes in the landfill contains.....
a) Solids b) Slurries c) Liquids d) All of the above
5. What plan should we make to the disposal of solid waste?
a) Integrated waste management plan b) Recycling of waste management plan c) Use of waste management plan d) none
6. In the landfill sites, the first anaerobic phase is characterized by.....
a) high pH, volatile acid production, low COD and conductivity and low CH₄
b) low pH, high volatile acid production, high COD and conductivity and low CH₄
c) high pH, low Volatile acid production, high COD and low conductivity and high CH₄
d) high pH, high Volatile acid production, Low Cod and High Conductivity and low CO₂
7. _____ emission is cited as an issue from incineration?
a) Carbon b) Dioxin c) Sulphur d) Nitrogen
8. As per the BMW rules, 2016 the anatomical waste is classified in
a) 2 b) 3 c) 4 d) 8
9. To measure the MIC ratio, following gas is ignited as a standard gas.
a) Carbon dioxide b) Methane c) Oxygen d) Nitrogen
10. Explosion of a gas or vapor occurs, when ambient air temperature is _____ than flash point of a flammable material.
a) Same b) Smaller c) Greater d) None
11. What is the general name for the class of structures made of rolled up carbon lattices?
a) Nanorods b) Nanotubes c) Nanosheets d) Fuller rods
12. The synthesized magnetic nanoparticles from _____ have been found to self-arrange automatically.
a) Zinc b) Copper c) Iron d) Zirconium

Q.2. Attempt any eight of the following. (16)

1. Physical properties of SW
2. Difference between dump and landfill
3. Active gas collection system
4. Carbon nanoparticles
5. Enumerate Character of Nano Particles
6. Recycling process for E-waste
7. Physical characteristics of HW
8. Steps in the Management of Biomedical Waste
9. On site storage, handling of SW
10. Explain the 3Rs of Environment

Q. 3 What is need liners in the landfill? Discuss Criteria for site selection for landfilling. Explain the different landfilling methods in details. (08)

OR

Q.3. Define MSW. Explain types of Collection methods and systems, transfer and transport system of MSW. (08)

Q.4 Explain the different categories, segregations, collection and treatment for BMW according to BMW rules 2016. (08)

OR

Q.4. Describe different ways to treat E-Waste in details. (08)

Q.5 Describe the flowchart of manifest (Form 13) & HW Import & Export Procedure (08)

OR

Q.5 Give detailed explanation about Zonation System, Flammability Unit, Flash Point, and T Code. (08)

Q.6. How Nanoparticles enter into human body ?Explain properties, importance and uses of, silver, titanium Nano particles. (08)

OR

Q.6. Define nanoparticles and explain properties and applications of organic nanoparticles. (08)

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THE CHARUTAR VIDYA MANDAL UNIVERSITY
M.SC. ENVIRONMENTAL SCIENCE & TECHNOLOGY (EST) – SEMESTER IV
SUMMER (REGULAR) 2022 EXAMINATION

Course Title: Environmental Resources and Biodiversity Conservation

Course Code: 101350402

Total Printed Pages : 02 (Two)

Date: 12/04/2022

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**. **(12)**

- (1) _____ is an advantage of renewable source of energy.
(a) Non-affordable (b) Non-limited (c) Non-reliable (d) None
- (2) Carbonification is not a part of _____ production.
(a) biogas (b) biofuel (c) bioplastics (d) All *
- (3) Biogas decreases _____ emission in the atmosphere.
(a) GHG (b) Hydrogen (c) Oxygen (d) None
- (4) Geothermal energy is an example of _____ energy.
(a) Conventional (b) Non-conventional (c) Non-renewable (d) None
- (5) Ploughing of land across the hill is done using the following method.
(a) Terracing (b) Contour (c) Leaching (d) Strip farming
- (6) _____ is a tannin-yielding plant.
(a) *Cassia* (b) *Embllica* (c) *Acacia* (d) All
- (7) Rich biological diversity exists at _____.
(a) Equator (b) Tropic (c) Temperate (d) None
- (8) There are _____ numbers of hotspots in the world.
(a) 16 (b) 26 (c) 36 (d) None
- (9) National parks in Gujarat are _____.
(a) 20 (b) 22 (c) 25 (d) None
- (10) Kaziranga is a national park present in _____.
(a) Gujarat (b) Assam (c) Odisha (d) None
- (11) There are _____ national parks in India.
(a) 106 (b) 126 (c) 136 (d) 146
- (12) Rio De Janeiro was held in 1992 for _____.
(a) Wildlife Convention (b) Protected Area Convention
(c) Conservation of Wildlife (d) Biodiversity Convention

Q.2 Attempt **any eight** of the following. **(16)**

- (1) Advantages of renewable resources
- (2) Ecological services and benefits of wetland ecosystem
- (3) Effects of photovoltaic cell
- (4) Enlist the types of energy generated from sea
- (5) Enlist the wood dye-yielding plants
- (6) Impacts of fossil fuels
- (7) Tidal energy, Geothermal energy
- (8) Types of conventional energy
- (9) Types of forests as per Champion and Seth (1968)
- (10) Types of Minor Forest Produce (MFP)

Q.3 Explain working of photovoltaic cell with diagram. Describe different applications related to solar energy. **(08)**

OR

Q.3 Describe nuclear fission and nuclear fusion. Discuss advantages and disadvantages of nuclear energy. **(08)**

Q.4 What is biogas? Discuss structure, functions and applications of biogas digester. **(08)**

OR

Q.4 Explain wind energy conversion. Add a note on advantages and disadvantages of wind energy. **(08)**

Q.5 Explain advantages and benefits of Agro-forestry over forestry and agriculture. **(08)**

OR

Q.5 Write botanical names, significance, and principal constituents of any six medicinal plants. **(08)**

Q.6 Describe the types and levels of biodiversity. Add a note on various types of threats to dwindling biodiversity. **(08)**

OR

Q.6 Explain the national parks, wildlife sanctuaries, and biosphere reserves with suitable examples. Write the key differences among them. **(08)**
