

Started on Tuesday, 22 March 2022, 8:30 AM

State Finished

Completed on Tuesday, 22 March 2022, 8:49 AM

Time taken 19 mins 50 secs

Marks 11/20

Grade 6 out of 10 (55%)

Question 1

Complete

Mark 0 out of 1

Approximately, heat content (unit: kCal/kg) of the raw mixed MSW of a developing nation and the heat content of the SCF (segregated combustible fraction) from the same MSW are respectively :

Select one:

- ☐ 600 & 1200
- ☒ 2400&4000
- ☐ 1200 & 3000
- ☐ 1600&4000

Question 2

Complete

Mark 1 out of 1

The Timarpur MSW incineration plant failed to work properly because:

Select one:

- ☐ The air pollution control equipment were not sufficient
- ☐ Municipal corporation failed to supply the promised 300 TPD of MSW
- ☒ Low calorific value of the waste feed into the plant
- ☐ It's furnace was not suitable for the raw mixed MSW

Question 3

Complete

Mark 1 out of 1

The incineration temperature is always kept below 1200 °C because

Select one:

- ☒ Possibility of significant NO_x formation at high temperatures
- ☐ Possibility of the damage of the refractory of the furnace
- ☐ Possibility of generation of superheated steam that might damage turbines
- ☐ Possibility of significant dioxins and furans at high temperatures

Question 4

Complete

Mark 0 out of 1

As per the Solid Wastes Management Rules, 2016, the content of the 'dry waste container' should be:

Select one:

- ☐ subjected thermal treatment first and the ash to be taken to landfill
- ☐ subjected to a thermal treatment technique like incineration
- ☐ segregated and the burnable should go for thermal technique
- ☒ not landfilled if the calorific value is > 1500 kcal/kg

Question 5

Complete

Mark 0 out of 1

Separation of the unwanted materials from MSW is usually done after composting, because:

Select one:

- ☐ C/N ratio and moisture content of raw MSW are within the optimum range
- ☐ The organic matter undergoes about 50% weight reduction during composting
- ☐ The raw MSW has foul smell and might contain toxic components
- ☒ The components to be removed become loose after composting

Question 6

Complete

Mark 1 out of 1

The first option to be considered among the various waste treatment options is always the biological method because:

Select one:

- ☐ Biological methods are not affected by pH and temperature
- ☐ The biodegradation is slow and the plants can assimilate the nutrients easily.
- ☒ The end products are acceptable to the nature
- ☐ It is easy to manage biological reactors due to low uncertainty

Question 7

Complete

Mark 0 out of 1

Although vermi-composting produces high quality compost than the ordinary windrow composting, it is not usually used on a large scale or for big cities. This is because

Select one:

- ☐ vermicomposting process is slower than windrow composting
- ☐ segregation requirements for vermi-composting is not easy to meet
- ☐ earthworms are taken away by birds continuously
- ☒ it is difficult to separate the earthworms from vermi-compost

Question 8

Complete

Mark 0 out of 1

The following are main the steps (in order) in the manufacture of RDF (Refuse Derived Fuel) from raw MSW:

Select one:

- ☒ Air classification ---> drying ---> pressing ---> shredding
- ☐ Drying ---> air classification ---> shredding ---> pressing
- ☐ Pressing ---> drying ---> shredding ---> air classification
- ☐ Air classification ---> shredding ---> pressing ---> drying

Question 9

Complete

Mark 1 out of 1

Heat content of raw MSW can be enhanced by

Select one:

- ☐ mixing with food waste and shredding
- ☐ windrow composting as the reactions involved are exothermic
- ☐ incineration and mixing with high heat containing materials
- ☒ removing the inert components

Question 10

Complete

Mark 0 out of 1

Approximately, the average solid waste generation rate in an Indian metro city is

Select one:

- ☐ 0.5 kg/capita/day
- ☐ 1.5 kg/capita/day
- ☐ 0.20 kg/capita/day
- ☒ 1.0 kg/capita/day

Question 11

Complete

Mark 1 out of 1

When the vermi-composting process is over, earthworms are usually separated from the compost by:

Select one:

- ☐ eddy current separators
- ☐ careful screening
- ☒ exposing to sunlight
- ☐ manually picking up

Question 12

Complete

Mark 1 out of 1

Anaerobic composting and aerobic windrow composting methods take about ----- **months** respectively to make ripe compost.

Select one:

- ☐ 6 & 1.0
- ☐ 6 & 0.5
- ☐ 5 & 1.0
- ☒ 6 & 2.0

Question 13

Complete

Mark 1 out of 1

In the vermi-composting process, what earthworms do ?

Select one:

- ☐ Degrade the organic matter in a big way
- ☐ Add on N, P, K to the organic matter
- ☐ Lay cocoons to enhance the N, P, K content
- ☒ Facilitate the growth of aerobic bacteria

Question 14

Complete

Mark 1 out of 1

In aerobic windrow composting, many microorganisms take part. Which of the following statement is true in that regard ?

Select one:

- ☐ Fungi decompose simple carbohydrates and actinomycetes decompose lignin.
- ☐ Bacteria decompose lignin and actinomycetes decompose simple carbohydrates.
- ☐ Fungi decompose hemi-cellulose and bacteria decompose lignin
- ☒ Actinomycetes decompose hemi-cellulose and bacteria decompose simple carbohydrates.

Question 15

Complete

Mark 0 out of 1

In a developing nation like India, raw mixed MSW contains approximately ----- % of biodegradables, ----- % inerts respectively.

Select one:

- ☒ 70 & 20
- ☐ 30 & 40
- ☐ 20 & 70
- ☐ 60 & 10

Question 16

Complete

Mark 0 out of 1

In aerobic composting, height of the windrow is very important because

Select one:

- ☐ Too low the windrow height, the gases generated escapes easily to the atmosphere
- ☐ Too low the windrow height, the C:N ratio usually get tilted
- ☐ Too high the windrow, difficult to maintain the optimum temperature
- ☒ Too high the windrow, microorganisms do not reach the lower waste layers

Question 17

Complete

Mark 1 out of 1

Ultimate analysis of MSW can be used to compute:

Select one:

- ☐ Incinerability of the waste in a Tanner diagram
- ☒ Air required for burning and composting
- ☐ Bulk density and specific heat of the waste
- ☐ Moisture content and inert content of the waste

Question 18

Complete

Mark 1 out of 1

Air classifiers can be used to separate the combustible components of dry MSW from the non-combustible components because:

Select one:

- ☒ Most of the combustible components are lighter than the non-combustibles
- ☐ Air classifier has a cyclonic separator fixed at the top
- ☐ There is a remarkable difference in the specific heat of the combustibles and non-combustibles.
- ☐ Air classifier has very high separation efficiency

Question 19

Complete

Mark 1 out of 1

The main acidic gases that may be generated during incineration are:

Select one:

- ☐ HF & H₂S
- ☐ CO & NO_x
- ☐ Dioxins and Furans
- ☒ SO₂ & HCl

Question 20

Complete

Mark 0 out of 1

Venturi scrubber is perhaps the most popular air pollution control equipment in India because

Select one:

- ☐ It can remove acidic gases and particular matter
- ☐ It can be used easily along with ESP or bag-filter
- ☐ It has very high particle removal efficiency and pressure drop
- ☒ Water used for scrubbing can be treated and reused

◀ wed march2nd(6pm) MinorQueClarification

Jump to...



Mar27th(Sun) (quiz3) (830am-850AM) ▶