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Question Paper Code: 49117

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

Elective

Civil Engineering

14UCE917 – MUNICIPAL SOLID WASTE MANAGEMENT

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

	PARI	$A - (10 \times 1 = 10 \text{ Marks})$			
1.	are those defined as wastes of industrial, institutional or consumer origin that				
	potentially dangerous either immedi	ately or over a period of time to human beings and the			
	environment.				
	(a) Biodegradable wastes	(b) Non-biodegradable wastes			
	(c) Hazardous wastes	(d) Residential waste			
2encompasses activities in which materials are identified as no longer being					
	Value and are either thrown away of	or gathered together for disposal.			
	(a) Solid waste management	(b) Waste generation			
	(c) Waste storage	(d) Waste processing			
3.	refers to the activities	s associated with the handling of solid wastes until they			
	Are placed in the containers used f	or their storage before collection.			
	(a) On-site handling	(b) On-site storage			
	(c) On-site collection	(d) None of the above			
4.	The approximate time taken for the	paper to degrade is			

(b) One year

(c) Ten years

(d) 5 to 30 days

(a) 5 to 7 days

5.	The collection systems in which the containers used for the storage of wastes remain at to point of waste generation except when moved for collection is known as						
	(a) Hauled- container systematical experiments (a) Hauled- container systematical experiments (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	em	(b) S	Stationary cont	ainer	system	
	(c) Hauled- container syste	ems	(d).	All the above			
6.	Communal collection of solid	waste in rural area	as is g	enerally done	by		
	(a) Community Rollers	(b) Tipping but	ckets	(c) Animal c	arts	(d) Bins	
7.	All means of reducing the amo	ounts of waste tha	t must	be collected a	ınd di	sposed of by solid	
	waste authorities is known as						
	(a) Waste reduction (l	b) Source reduction	on (c) Waste recov	ery	(d) Recycling	
8.	involves conversion	on of waste into g	gaseou	s, liquid and so	olid c	onversion products	
	with concurrent or subsequent	release of heat en	ergy.				
	(a) Hydrolysis processes		(b)	Thermal treat	ment		
	(c) Chemical treatment		(d) Biological treatment				
9.	are useful mach	nines for the volui	me red	luction of bulk	y was	ste such as reams	
	of paper, paper materials, bumpers, tires, refrigerators and the shredding of different						
	materials such as scrap iron, aluminum, copper, plastic as well as municipal solid waste and						
	industrial waste.						
	(a) Grinders (b)) Shredders	(c)	Γrammels	(d)	Wet pulping	
10.	refers to compacte	ed clay or shale,	bitum	en or soil seal	ants, e	etc., and are	
	generally less permeable, resistant to chemical attack and have good sorption properties.						
	(a) Natural liners		(b)	Synthetic line	rs		
	(c) Geo-membrane		(d)	Geotextiles			
	I	PART - B (5 x 2 =	= 10 M	larks)			
11.	List out biodegradable and nor	n-biodegradable v	vastes				
12.	Enumerate the biological prop	erties of solid wa	ste.				
13.	What is meant by transfer stati	ion?					
14.	What is meant by Bio-methana	ation?					

15. Differentiate between the open dumping and sanitary landfill

PART - C (5 x $16 = 80 \text{ Marks}$)	
16. (a) Explain the methodologies for characterization of Municipal Solid Waste.	(16)
Or	
(b) (i) Explain the Goals and Principles of Municipal Solid Waste Management.	(8)
(ii) Explain the role of NGO's in Municipal Solid Waste Management.	(8)
17. (a) Explain in detail about 3R principle	(16)
Or	
(b) (i) Describe about the shredding process.	(6)
(ii) Explain about the waste processing techniques	(10)
18. (a) Explain the constraints involved in collection and transfer of Solid waste.	(16)
Or	
(b) Write about street cleaning and the tools used for street cleaning	(16)
19. (a) Explain in detail about Energy Recovery from MSW. Also list out the parameter	ers
affecting it. Or	(16)
(b) Write short notes on	
(i) Incineration.	(4)
(ii) Vacuum pyrolysis.	(4)
(iii) Composting.	(4)
(iv) Landfilling.	(4)
20. (a) (i) Describe the Disposal methods.	(8)

Or

(ii) Describe about the Site construction requirements for landfill.

(b) Write in detail about the different methods of rehabilitating dump sites?

(8)

(16)