

Enrollment No.....



Faculty of Agriculture
End Sem (Even) Examination May-2022
AG3CO27 Renewable Energy & Green Technology
 Programme: B.Sc. (Hons.) Branch/Specialisation: Agriculture

Duration: 3 Hrs.**Maximum Marks: 50**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q. i. The major constitute of biogas is- 1
 1 (a) Methane (b) Ethane
 (c) Carbon dioxide (d) Carbon monoxide
- ii. Calorific value of biogas is- 1
 (a) 450 Kcal/m³ (b) 1000 Kcal/m³
 (c) 3000 Kcal/m³ (d) 4500 Kcal/m³
- iii. _____ is a petrochemical and is used as raw material for chemical, pharmaceutical, and paint industry. 1
 (a) Plutonium (b) Uranium (c) Coal (d) Protactinium
- iv. Biodiesel is produced by- 1
 (a) Trans-esterification (b) Combustion
 (c) Reduction (d) Titration
- v. _____ are used as air exhausts in indirect solar dryers. 1
 (a) Turbines (b) Ceiling fans
 (c) Chimneys (d) Table fans
- vi. Renewable energy-based power plants have _____. 1
 (a) Negligible fuel cost (b) Low energy availability
 (c) Negligible production capacity (d) Fuel storage tanks
- vii. Which of the following has caused global warming? 1
 (a) Burning of biomass
 (b) Burning of fossil fuels
 (c) Releasing CFCs into the atmosphere
 (d) Melting metals
- viii. Which of the following is the cleanest fossil fuel? 1
 (a) Natural gas (b) Petrol (c) Petroleum (d) Coal

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- ix. Wind energy is first used in- 1
 (a) Iran (b) Germany (c) China (d) US
- x. Which country created windmills? 1
 (a) Iran (b) Germany (c) China (d) US
- Q. i. What is renewable energy? 1
 2
- ii. Write short note on biomass and energy plantation. 2
- iii. Explain renewable resources of energy with their advantages. 5
- OR iv. Explain biomass conversion with their approaches. 5
- Q. i. Define biogas with their constituents. 1
 3
- ii. Write down the name of raw material for biogas generation. 3
- iii. Explain gasifiers with their types. 4
- OR iv. Explain the Deenbandhu biogas plant with well labelled diagram and their applications. 4
- Q. i. Define solar energy with their applications. 2
 4
- ii. Describe the classification of methods for solar energy utilization. Brief explain solar cooker with their well labelled diagram. 6
- OR iii. Write a short note on solar water heater. 6
- Q. i. Define cabinet dryer. 2
 5
- ii. Define solar Lantern with their applications. 2
- iii. Explain photovoltaic solar energy with their advantages and limitations. 4
- OR iv. Describe solar water pumping system with well labelled diagram and advantages. 4
- Q. Attempt any two: 6
 6

- i. Define wind energy with advantages and disadvantages. 4
- ii. Define windmills with their different types. Explain vertical type windmill. 4
- iii. Explain Horizontal axis propeller type windmill with single blade and draw a well labelled diagram. 4

Marking Scheme
AG3CO27 Renewable Energy & Green Technology

Q. 1	i. The major constitute of biogas is-		1
	(a) Methane		
	ii. Calorific value of biogas is-		1
	(d) 4500 Kcal/m ³		
	iii. _____ is a petrochemical and is used as raw material for chemical, pharmaceutical, and paint industry.		1
	(c) Coal		
	iv. Biodiesel is produced by-		1
	(a) Trans-esterification		
	v. _____ are used as air exhausts in indirect solar dryers.		1
	(c) Chimneys		
	vi. Renewable energy-based power plants have _____.		1
	(a) Negligible fuel cost		
	vii. Which of the following has caused global warming?		1
	(b) Burning of fossil fuels		
	viii. Which of the following is the cleanest fossil fuel?		1
	(a) Natural gas		
	ix. Wind energy is first used in-		1
	(c) China		
	x. Which country created windmills?		1
	(a) Iran		
Q. 2	i. Definition (As per explanation)		1
	ii. Biomass	1 Mark	2
	Energy plantation.	1 Mark	
	iii. Definition	2 Marks	5
	With their advantages.	3 Marks	
OR	iv. Biomass conversion	3 Marks	5
	Approaches.	2 Marks	
Q. 3	i. Definition (As per explanation)		1
	ii. List of biomass (3)	(1 Mark*3)	3
	iii. Definition	2 Marks	4

		Types.	2 Marks	
OR	iv.	Explain the Deenbandhu biogas plant	2 Marks	4
		Labelled diagram and their applications.	2 Marks	
Q. 4	i.	Define solar energy	1 Mark	2
		With their applications.	1 Mark	
	ii.	Classification of methods	3 Marks	6
		Solar cooker with their well labelled diagram.	3 Marks	
OR	iii.	Write a short note on solar water heater.		6
Q. 5	i.	Definition (As per explanation)		2
	ii.	Define solar Lantern	1 Mark	2
		With their applications.	1 Mark	
	iii.	Advantages	2 Marks	4
		Diagram	2 Marks	
OR	iv.	Definition	2 Marks	4
		Diagram	2 Marks	
Q. 6		Attempt any two:		
	i.	Advantages	2 Marks	4
		Disadvantages.	2 Marks	
	ii.	Windmills with their different types.	2 Marks	4
		Explain vertical type windmill.	2 Marks	
	iii.	Definition	2 Marks	4
		Diagram	2 Marks	
