Reg. No. : | | | | | | | | | | |

Question Paper Code: 96S04

M.E. DEGREE EXAMINATION, JAN 2020

Elective

Electrical l Engineering

19PPE604-BIOENERGY FROM WASTE

(Regulation 2019)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Biomass is used in the production of CO1- R

   (a) fibres (b) chemicals

   (c) transportation fuels (d) biochemicals

2. Production of bioethanol is through fermentation of _____ and starch components CO1- R

   (a)) alcohol (b) sugar

   (c) milk (d) acid

3. This is also called a biogas CO2- R

   (a) biobutanol (b) biodiesel

   (c) bioethanol (d) biomethane

4. In biomethane, the percentage of carbon dioxide is CO2- R

   (a) 55-60 (b) 35-45 (c) 30-40 (d) 32-43

5. By-products generated during the rectification of bioethanol is utilized as CO3- R

   (a) sheep feed (b) cow feed (c) dog feed (d) pig feed

6. Bioethanol is mixed with _____ to prepare transport fuel CO3- R

   (a) oi1 (b) petrol (c) kerosene (d) diesel

7.	Bioethanol is denatured alcohol, also referred to as	CO4- R
	(a) methylene (b) ethylene	
	(c) ethylene glycol (d) methylated spirit	
8.	This forestry material is used as biomass	CO4- R
	(a) fish oil (b) logging residues	
	(c) manure (d) tallow	
9.	The aerobic digestion of sewage is utilized in the production of	CO5- R
	(a) metal articles (b) biofuels	
	(c) biomass (d) synthetic fuels	
10	Which is considered to be the largest source of Biomass energy?	CO5- R
	(a) Wood (b) Garbage	
	(c) Agricultural waste (d) Concrete	

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11	Define the sources, types and composition of various types of wastes.	CO1- U	(8)
12	What is incineration? Explain briefly about its types.	CO2- U	(8)
13	What is pyrolysis? Explain the process with schematic diagram to convert MSW to electricity.	CO3- U	(8)
14	Explain the process involved in Anaerobic digestion of sewage and municipal wastes.	CO4- U	(8)
15.	Explain briefly on Environmental and health impacts of waste to energy conversion.	CO5- U	(8)