



Registration No:
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4th SEMESTER REGULAR EXAMINATION-NOV-2019
AT-243
Renewable Energy and Green Technology

B.Sc (AG)

Time : 2 Hours

Maximum : 50 Marks

(Answer all questions of Section – A)

SECTION – A

Q.1 Fill up the Blanks with suitable and meaningful word(s): [10×0.5 = 5]

- a The solar module consist of -----
- b The major components of biogas are ----- and -----.
- c Major byproduct of biodiesel is -----.
- d Pvrnometer is used to measure -----.
- e Producer gas mainly consists of -----.
- f The orientation of solar collector is approximately -----.
- g -----biomass is known as briquetting
- h B20 consists of ----- and -----
- i In India the recommended HRT of cow dung for biogas plant is -----
- j Average gas produced per kg of cattle dung is around-----

Q.2. Define or Explain the following in one or two sentences [5 × 1 = 5]

- a) B100
- b) Horizontal wind mill
- c) Solar distillation
- d) Deenabandhu biogas plant
- e) Solar cooker

Q.3. Match the following [10 × 0.5 = 5]

<u>Column-I</u>	<u>Column-II</u>
a) Fixed dome Model	1) 400 ⁰ C
b) Flat plate collector	2) Wind mill
c). Tip- speed ratio	3) Fermentation
d). Ethanol	4) Bio-diesel
e). Transesterification	5) Solar pond
f). Pyrolysis	6) Solar cell
g). Combustion	7) Water heater
h). Salt concentration	8) 1000 ⁰ C
i). Thermal decomposition	9) Gasifier
j). W _p	10) Bio-gas plant



Q.4. Write TRUE or FALSE against the following statements

[10 × 0.5 = 5]

- a) Pyrolysis refers to the thermal decomposition of wastes in presence of excess air.
- b) Acidic pH is good for biogas in bio-gas plant.
- c) 5 — 10% Ethanol is common blend with gasoline for normal petrol engines.
- d) 5 to 10 biodiesel is appropriate for petrol engine
- e) Most of the wind mill in India uses horizontal wind mill for power generation
- f) Methanogenic bacterial are passive in 35⁰ C temperature
- g) Down draft type gassifiers are suitable for engine operation.
- h) Solar PV system is mostly used for water heating purpose
- i) Flat type solar collector produces temperature high than focusing type.
- j) The flammable gas in the biogas is CO₂ and CH₄ both.

SECTION – B: (Short Answer Questions)

Attempt any five questions. Each question carries equal marks)

[5 x 6 =30]

- Q.5 Describe the different types of biogas plants and factors affecting biogas production.
- Q.6 Describe the different routes of biomass conversation to energy.
- Q.7 What is the principle of solar dryer and describe the different types of solar dryer?
- Q.8 Draw a line diagram for an integrated biodiesel plant with detail processes
- Q.9 Difference between conventional and non conventional energy
- Q.10 What is biofuel? Describe the detail production of one biofuel?

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