

**B.Tech Odd Semester (CBCS) Exam.,  
December—2018**

**AGRICULTURAL ENGINEERING**

**( 7th Semester )**

Course No. : AE-CC-37

**( Renewable Energy Sources )**

*Full Marks : 50*

*Pass Marks : 15*

*Time : 2 hours*

*Note :* 1. Answer any **five** questions.

2. Begin each answer in a new page.

3. Answer parts of a question at a place.

4. Assume reasonable data wherever required.

5. The figures in the margin indicate full marks for the questions.

1. Explain the indirect type solar dryer. 10
2. (a) Differentiate between horizontal and vertical axis wind rotors. 7
- (b) Differentiate between drag force and lift force. 3

3. (a) Write a short note on biodiesel. 5
- (b) Write a short note on parabolic solar cooker. 5
4. (a) What is biogas? What are the main compositions of biogas? Write its uses. 2+2+2=6
- (b) What do you mean by payback period? 2
- (c) What do you mean by benefit cost ratio? 2
5. Explain the updraft gasifier with neat sketch. Write its advantages and application. 6+2+2=10
6. (a) One kilogram of fresh dung having solid matter content of 18% is mixed with an equal quantity of water. Determine the solid content of the slurry. 5
- (b) Draw the neat diagram of piston press briquetting machine. 5
7. Explain the KVIC biogas plant with neat sketch. 10
8. Determine the local solar time and declination at a location latitude 23 15 N, longitude 77 30 E at 12.30 IST on June 20. Equation of time correction is given from standard table or chart (1 01 ). 10

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