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

Question Paper Code: 39520A

B.E. / B.Tech. DEGREE EXAMINATION, SEP 2020

Elective

Electronics and Instrumentation Engineering

01UEI920 - FUNDAMENTALS OF RENEWABLE ENERGY SYSTEMS

(Regulation 2013)

Duration: One Hour Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any Six of the following Questions)

1. Harmful radiation emitted by the sun is _____.

   (a) visible (b) infra-red (c) ultra-violet (d) radio waves

2. A liquid flat plate collector is usually held tilted in a fixed position, facing _____ if located in the northern hemisphere.

   (a) East (b) West (c) North (d)South

3. The wind intensity can be described by

   (a) Reynolds number (b) Mach number (c) Beaufort number (d) Froude number

4. The amount of energy available in the wind at any instant is proportional to _____ of the wind speed.

   (a) Square rootpower of two (b) Square root power of three

   (c) Square power (d) Cube power

5. The main constituent of CNG is

   (a) Methane (b) Butane (c) Ethane (d) Propane

6. Which of the following is not used to produce bio-diesel?

   (a) Jetropha (b) Karanj (c) White gram (d) Kusum

7. The centre of earth is estimated to have a high temperature of about

   (a) 1,000 K (b) 4,000 K (c) 6,000 K (d) 10,000 K

8. The source of energy of the sun is _____.

(a) nuclear fission (b) chemical reaction (c) nuclear fusion (d) photoelectric effect

9. What are the two most common ways to produce hydrogen gas used in fuel cells?

(a) Electromagnetism and quantum mechanics (b) Steam reforming and electrolysis

(c) Electrolysis and absorption (d) Thermal conductivity and refraction

10. A solar cell is made up of _____.

(a) silicon (b) titanium

(c) magnesium (d) teflon

PART – B (3 x 8= 24 Marks)

(Answer any three of the following Questions)

11. Write short notes on different types of solar energy collectors with neat diagrams (8)

12. With a neat diagram, explain how wind energy can be converted into electrical energy. . (8)

13. Explain with neat sketches, the types and power generation of a biogas power plant (8)

14. Compare the working, application, merits and demerits of any two fuel cells.. (8)

15. What is geothermal energy? How can geothermal energy are utilized for electric power Generation. (8)