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Question Paper Code: 39520

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)

- Solar radiation flux is usually measured with the help of a _____.
(a) Anemometer (b) Pyranometer (c) Sunshine recorder (d) All of the above
- 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
- The wind intensity can be described by
(a) Reynolds number (b) Mach number (c) Beaufort number (d) Froude number
- The amount of energy available in the wind at any instant is proportional to _____ of the wind speed.
(a) Square root power of two (b) Square root power of three
(c) Square power (d) Cube power
- The main constituent of CNG is
(a) Methane (b) Butane (c) Ethane (d) Propane
- Which of the following is not used to produce bio-diesel?
(a) Jetropha (b) Karanj (c) White gram (d) Kusum
- 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. The main issue about hydrogen as an alternative energy source is:
- (a) Its destructive capacity (b) Process of separating it from other elements
(c) The cost of refinement (d) Its large mass

PART – B (3 x 8= 24 Marks)

(Answer any three of the following Questions)

11. What are the conventional sources of energy and explain briefly. (8)
12. Explain the principle of building integrated PV system with suitable sketch. (8)
13. Explain briefly about the horizontal wind mills with neat sketch. (8)
14. Compare the working, application, merits and demerits of any two fuel cells. (8)
15. Explain with neat sketch, the methods of operation of tidal power generation (8)