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Question Paper Code: U9776

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

Open elective

21UME976 RENEWABLE ENERGY TECHNOLOGIES

(Common to All Engineering branches)

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The world average per person energy consumption is equivalent to _____ tonnes of coal . CO1 U
(a) 3 (b) 2.2 (c) 4.5 (d) 1.0
2. The fourth largest producer of coal and lignite in the world is _____. CO1 U
(a)USA (b) Russia (c) India (d)China
3. What technology ensures stable power supply by integrating solar PV systems with the electrical grid? CO1 U
(a) Inverter (b) Charge Controller (c) Battery (d)Transformer
4. What device is commonly used for measuring solar radiation intensity at the Earth's surface CO1 U
(a) Anemometer (b) Pyranometer (c)Barometer (d) Luxmeter
5. Which of the following are the components of horizontal type wind turbine? CO1 U
(a) Break (b)Gears (c)AC generators (d) All the above
6. The turbine used for wind power plant is _____. CO1 U
(a) Steam turbine (b)Aeroturbine
(c)Kaplan turbine (d) Reaction turbine
7. The aerobic digestion of sewage is used to produce _____. CO1 U
(a) Biomass (b)Bio-fuels (c)Synthetic fuels (d) Metal articles

19. (a) Explain the fundamental workings of fixed dome type digester biogas plant with neat sketch, application, advantages and disadvantages. CO4 - U (16)
- Or
- (b) Explain the working process of sugarcane-based ethanol production and its advantages, disadvantages, and potential applications. CO4 - U (16)
20. (a) Discuss the importance of tidal range and the difference between ebb and flood tides in power generation with a neat diagram ,its advantages and disadvantages CO5 - U (16)
- Or
- (b) Explain the operational principles of a geothermal energy plant employing the Binary Cycle System applications, advantages, and potential disadvantages. CO5 - U (16)

