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M.Tech. Electrical (Power System) (Sem.-3)**RENEWABLE ENERGY RESOURCES****Subject Code : EEPS-301E****Paper ID : [51073]****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :****1. Attempt any FIVE questions out of EIGHT questions.****2. Each question carries TWELVE marks.**

- Q1. i) What are renewable energy sources? How does it relate to energy conservation and global climate changes? What is the impact of renewable energy generation on environment?
ii) What do you understand from distributed energy systems and dispersed generation?
(7,5)
- Q2. What is the role of solar radiation in the generation of electricity? How does we measure it? How the solar thermal energy collectors work for? What are the advantages of solar energy over other sources of energy?
(12)
- Q3. i) How the wind turbine generator works? Explain the wind characteristics and also discuss wind power generation curve?
ii) What are wind farms? What should be the capacity of wind farms for penetration into Grid?
(7,5)
- Q4. i) Discuss the plate tectonic theory and elaborate the interior structure of earth.
ii) What is geothermal energy? How it is converted into electrical energy?
(7,5)
- Q5. What is ocean energy? How the tidal power scheme converts into electrical energy? How is the wave energy and tidal power are related? Explain.
(12)
- Q6. What is fuel cell? What are the types of fuel cell? Give the operating characteristics of fuel cell.
(12)
- Q7. What is hydrogen energy system? How much hydrogen energy is contributing to the generation of electricity? How does the development of hydrogen cartridge done? What are hybrid energy systems? Discuss.
- Q8. Explain **ANY TWO** :
(6,6)
i) GHG emission
ii) Horizontal axis wind turbine
iii) Geothermal field