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Total No. of Pages : 01

Total No. of Questions : 08

**M.Tech. (Power System) (2018 Batch) (Sem.-1)****WIND AND SOLAR SYSTEMS****Subject Code : MTPS-103D-18****Paper ID : [75785]****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTIONS TO CANDIDATES :****1. Attempt any FIVE questions out of EIGHT questions.****2. Each question carries TWELVE marks.**

1. What is the present status of wind energy power generation in India? Write about the historical development of use of wind energy based systems. Elaborate. What are advantages and disadvantages of wind energy systems?
2. How the wind turbine generator circuit works? How do we control and monitor the working of wind turbine generator?
- 3
  - i) Derive an expression for reactive power and voltage for isolated wind system.
  - ii) What is the economic aspect of isolated wind system?
4. What is solar radiation? How it is converted into electricity? What is the function of concentrators in solar systems? What are the applications of solar energy based systems? How this solar energy systems are helpful in saving the non renewable energy sources?
5. Describe the role of power systems in generation and distribution of wind and solar generated power. Also show the interconnection of power systems for this purpose.
6. What is solar thermal power generation systems? How do thermal power generation systems work? What are the advantages and disadvantages of these systems? How much they contribute in overall generation of electricity of the country?
7. What is PV cell? Explain the working of PV cell. How the PV power generation unit works? How the solar generated power is stored? Discuss.
8. Explain the following :
  - i) Technical regulations for interconnection of wind farm.
  - ii) Energy storage devices.