

12. (a) Explain about the components in a wind power plant and their operation.

Or

- (b) (i) Explain the power curve for a typical horizontal axis wind turbine. (7)
(ii) Discuss about the siting requirements for wind power plants. (6)

13. (a) (i) Explain the method of power production by using central receiver power plants with its schematic diagram. (6)

- (ii) Discuss about the characteristics of solar photovoltaic cells when they are connected in parallel and series. (7)

Or

- (b) (i) Describe the functioning of solar pond and its applications. (7)
(ii) Explain how solar module and array are formed. (6)

14. (a) Explain the biochemical processes to convert biomass into energy.

Or

- (b) Explain the principle and working of geothermal energy conversion process.

15. (a) Describe the principle and working of ocean thermal energy conversion system.

Or

- (b) (i) Explain the construction and operation of proton exchange membrane fuel cell. (7)
(ii) Discuss about the features and requirements of cryogenic storage system. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Explain the concept of maximum power point tracking (MPPT) in solar PV systems. Explain any one MPPT algorithm with flowchart,

Or

- (b) Discuss about the grid integration issues of wind power plants.