B.TECH. DEGREE EXAMINATION, MAY 2016

Eighth Semester

Branch : Electrical and Electronics Engineering

EE 010 805 G06—DISTRIBUTED POWER SYSTEMS (Elective IV) [EE]

(New Scheme—2010 Admissions)

[Regular/Supplementary]

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Explain why sunlight could be used as power source.

2. Explain power performance.

3. How fuel can be saved using integrated design ?

4. Define power potential.

5. What is voltage sag ?

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain characteristics of fuel cells.

7. Explain power circle diagram.

8. Explain integrated wind-diesel system.

9. Explain OTEC systems.

10. Explain fault clearing requirements.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each question carries 12 marks.

11. Explain charge regulators and PV modules. Explain why they are used.

Or

12. Explain various types of fuel cells and losses in fuel cells.

13. Explain the electrical design of wind farms.

Or

14. Explain the aerodynamic models of wind farms.

15. Explain the steady state equivalent circuit of wind-diesel systems.

Or

16. Explain the design of integrated wind-solar systems. What are advantages and limitations of the same ?

17. Explain the conversion process of biofuels into energy.

Or

18. Explain the isolated and parallel operation of generators.

19. Briefly explain different issues related with power quality. How they are resolved ?

Or

20. Explain the opeation of distributed generators on low voltage networks.

(5 × 12 = 60 marks)