

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Branch: Electrical & Electronics Engineering

Course Code: 19EE5PE2ES

Course: Electrical Energy Systems

Semester: V

Duration: 3 hrs.

Max Marks: 100

Date: 23.02.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

- 1 a) List the advantages and limitations of renewable energy sources **06**
- b) "Economic growth of a country depends on Energy". Justify **06**
- c) Define principle of fluidization and hence explain fluid bed combustion of coal with necessary diagrams. **08**

UNIT - II

- 2 a) With neat schematic layout explain coal fired power station. **12**
- b) Explain the general arrangement of hydroelectric plant with neat diagram. **08**

OR

- 3 a) Name the reactor's primary components and describe each one's purpose. **10**
- b) Give a brief explanation of how hydel plants are classified. **10**

UNIT - III

- 4 a) Derive an equation for the maximum efficiency of a solar cell. Also write the typical I-V curve for an ideal solar cell. **07**
- b) Explain the basic photovoltaic system with a neat block diagram. **07**
- c) List out the applications of solar PV cell. **06**

OR

- 5 a) Explain the effect of partial shading on the output of solar cells and suggest the remedial actions. **10**
- b) Discuss the similarities and differences of standalone and grid connected SPV systems. **10**

UNIT - IV

- 6 a) What is a smart grid? State the objectives of smart grid. **05**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

- b) With a block diagram, explain the components of wind energy conversion system. **10**
- c) List the advantages and disadvantages of wind energy conversion system. **05**

UNIT - V

- 7 a) What is tariff? Explain the various types of tariffs. **10**
- b) Describe (i) Connected load (ii) Load factor (iii) Plant capacity factor (iv) Plant Use factor (v) Demand factor **10**

B.M.S.C.E. - ODD SEM 2022-23