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

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Semester: V

Branch: Electrical & Electronics Engineering

Duration: 3 hrs.

Course Code: 19EE5PE2ES

Max Marks: 100

Course: Electrical Energy Systems

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
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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