

Duration: 3hrs

[Max Marks: 80]

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]
a Define micro grid and state it's needs.
b Define smart grid and elaborate it's need in current situation.
c Give comparison between conventional grid and smart grid
d Evaluate advantages and disadvantages of wind power system in micro-grid.
e Justify the need of anti-Islanding scheme
- 2 a Draw schematic diagram of D.C. microgrid and elaborate it along with its advantages, disadvantages, and limitations. [10]
b Elaborate the significance of Energy storage devices in micro grid. [10]
- 3 a Compare non-conventional sources from the point of micro-grid suitability. [10]
b Give importance of islanding in case of grid connected micro grid. Also give the proper sequence of operation for successful islanding. [10]
- 4 a Draw a block diagram on centralized control and elaborate its working, advantages and limitations [10]
b What is black start. Elaborate role of micro grid in it. [10]
- 5 a Elaborate opportunities & barriers of Smart Grid [10]
b Enlist various communication methods used for smart grid and elaborate any one in detail. [10]
- 6 a Draw and elaborate a functional block diagram of smart meter. [10]
b Describe the resilience and self-healing characteristics of smart grid [10]
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