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GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022
B. Tech Degree Examinations, May – 2021
(Eighth Semester)
BELPE 8021 – MICROGRID
(EE)

Time: 2 hrs

Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)**(1 x 10 = 10 Marks)**Q.1. Answer ALL questions

[CO#] [PO#]

- | | | |
|--|-----|------|
| a. A localized grouping of electricity generation, energy storage and load is termed as
(i) Macro grid
(ii) Tradational grid
(iii) micro grid
(iv) virtual Power plant | CO1 | PO 1 |
| b. Which factor driving Micro grid deployment in locations with existing electrical grid infrastructure
(i) Energy Security
(ii) Economic Benefits
(iii) Energy Integration
(iv) All of these | CO1 | PO 1 |
| c. What is the need of energy management in micro grids?
(i) To manage the renewable sources, storages and loads
(ii) To reduce the stress on grid during peak hour.
(iii) To obtain energy balance in an islanded operation
(iv) All of these | CO1 | PO 1 |
| d. Most of the Renewable energy sources are _____
(i) location-specific
(ii) highly efficient
(iii) universally available
(iv) polluting | CO2 | PO 1 |
| e. Distributed generations capable of delivering reactive power only is grouped under which of the following type
(i) Type-3
(ii) Type-1
(iii) Type-2
(iv) Type-4 | CO2 | PO 1 |
| f. The availability of Renewable energy sources is _____
(i) uncertain
(ii) constant
(iii) high
(iv) Regular | CO2 | PO 1 |
| g. Most of the power quality problems are related to _____
(i) Transmission Issue
(ii) Grounding Issue
(iii) Distribution Issue
(iv) All of these | CO3 | PO 1 |
| h. The frequency of Micro grid system is control the
(i) Reactive Power
(ii) both
(iii) Active Power
(iv) none | CO3 | PO 1 |
| i. The converters used Battery in DC Micro grid respectively in
(i) unidirectional
(ii) Bidirectional
(iii) both
(iv) None of these | CO4 | PO 1 |

- j. The modern electronic loads when they are connected to the isolated AC micro grid having PV as the single source of energy, the following conversion losses are natural
- | | |
|----------------|---------------|
| (i) AC-DC-AC | (ii) DC-DC-DC |
| (iii) DC-AC-DC | (iv) AC-AC-AC |

PART – B: (Short Answer Questions)

(2 x 5 = 10 Marks)

Q.2. Answer ALL questions

	[CO#]	[PO#]
a. What is the need of Distributed Generation?	CO1	PO 1
b. Why planning plays a vital role in DG.	CO1	PO 1
c. Recall some Energy storage elements in DG.	CO2	PO 1
d. List the use of Protective Relays	CO3	PO 1
e. Relate Micro grid with Smart grid	CO4	PO 1

PART – C: (Long Answer Questions)

(6 x 5 = 30 Marks)

Answer ANY FIVE questions

	Marks	[CO#]	[PO#]
3. Explain the role of renewable energy sources with respect to Indian scenario.	(6)	CO1	PO 1
4. Write briefly about the protection & control of Micro grid.	(6)	CO1	PO 1
5. With a neat sketch discuss Inverter based DG.	(6)	CO2	PO 1
6. Write short notes on Reactive power control.	(6)	CO2	PO 1
7. What are the market design issues in DG? Elaborate with examples	(6)	CO3	PO 1
8. Debate about the voltage control techniques with suitable diagram.	(6)	CO3	PO 1
9. Appraise the Micro grids in detail with their types.	(6)	CO4	PO 1
10. Give your views in Renewable Energy Micro grid design in your home town	(6)	CO4	PO 1

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