

**ADVANCED CERTIFICATE IN POWER  
DISTRIBUTION MANAGEMENT**

**Term-End Examination**

**June, 2017**

00844

**BEE-002 : ENERGY MANAGEMENT AND ITS  
APPLICATIONS**

*Time : 3 hours*

*Maximum Marks : 100*

**Note :** *The question paper has three parts : Parts I, II and III. Answer the questions as indicated in each part. Question no. 1 is compulsory.*

**PART I**

1. (a) Fill in the blanks.  $6 \times 1 = 6$
- (i) Incandescent bulbs are \_\_\_\_\_ efficient than CFL. (less/more)
- (ii) Iron losses in transformers are \_\_\_\_\_ losses. (variable/constant)
- (iii) DSM can be achieved by \_\_\_\_\_ energy efficiency.  
(reducing/enhancing)
- (iv) Industrial sector uses about \_\_\_\_\_ of the total commercial energy available. (67%/37%)

- (v) Power factor in inductive circuit is \_\_\_\_\_ in nature. (leading/lagging)
- (vi) GIS stands for \_\_\_\_\_ .  
(Geographic Information System/Global Information System)
- (b) Give the full forms of the following : 10  
WAN, WWW, RTU, SLD, MIS, ATM, GDP, ERP, ABT, MRI
- (c) State whether the following statements are *True* or *False* : 4×1=4
- (i) We should use copper wire as a substitute of fused wire.
- (ii) Always add acid to water when mixing sulphuric acid and water.
- (iii) Power cables and control cables should be run in the same cable trenches.
- (iv) Emergency Restoration System is used for restoration of transmission lines.

*Answer any five of the following :* 5×2=10

2. What do you mean by Emulsifier ?
3. What is Black Start Process ?
4. Define Permit to Work.
5. What are the benefits of AMR ?
6. What do you understand by Business Process Re-engineering ?
7. How is Automation in a sub-station achieved ?
8. What is spot billing ?

## PART II

Attempt any **five** questions.

5×8=40

9. What strategies can be used for energy security ?
10. What does an Energy Audit Report contain ?
11. Discuss the benefits of DSM for power utilities, consumers and the society.
12. State the consumption and potential energy saving levels of the industrial sector in India.
13. What are the barriers to DSM ?
14. Differentiate between Step potential and Touch potential.
15. Explain the need for zoning for natural disasters. What zoning schemes are in practice for earthquakes ?

### PART III

Attempt any **two** questions.

2×15=30

16. What is SCADA ? Discuss its usefulness for improving the operations of a power distribution utility.
  17. Explain the major causes for fire outbreaks in a power utility. What techniques can be used for handling and preventing such fires ?
  18. What immediate, medium and long-term strategies can be adopted for meeting the goal of clean energy for all ?
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