

**ADVANCED CERTIFICATE IN POWER  
DISTRIBUTION MANAGEMENT**

**Term-End Examination**

00884

**June, 2017**

**BEE-001 : POWER DISTRIBUTION SECTOR**

*Time : 3 hours*

*Maximum Marks : 100*

*Note : The question paper has four sections. Answer the questions as indicated in each section.*

**SECTION A**

*Attempt **all** questions in this section.*

1. Fill in the blanks.

$10 \times 1 = 10$

capacitors, increase, efficiency, 50%, two part tariff, investment, feedback, learning, per capita consumption, T & D losses, copper losses, energy charts, financial viability, time setting, plug setting, + 1% and - 1%, + 10% and - 10%, protection,

(a) Managing strategy through BSC (Balanced Score Card) proposes \_\_\_\_\_.

- (b) The primary objective of the Energy Conservation Act, 2001 is to \_\_\_\_\_ .
- (c) The frequency deviation allowed at LT level is from \_\_\_\_\_ .
- (d) \_\_\_\_\_ are used to improve the power factor. 8800
- (e) Industrial tariff includes \_\_\_\_\_ .
- (f) \_\_\_\_\_ and \_\_\_\_\_ setting are used for relay protection.
- (g) The regulatory commissions have a mandate to curb \_\_\_\_\_ .
- (h) Circuit breakers are used for \_\_\_\_\_ .
- (i) Distribution transformers normally have designed efficiency of around \_\_\_\_\_ .
- (j) The voltage deviation allowed for an LT system is \_\_\_\_\_ .

## SECTION B

Attempt any **ten** questions.

10×2=20

2. What are instrument transformers ?
3. What is trivector meter ?
4. List out the different tests performed on an energy meter.
5. What is a transformer ?
6. How is a 3-phase meter for HT metering system connected ?
7. How can we improve power factor in an LT system ?
8. List out the technical losses in an LT system.
9. What are the earthing systems used for LT systems ?
10. What is the impact of LT/HT voltage ratio on the losses ?
11. What is plug setting in a relay ?
12. What are iron losses in a transformer ?

## SECTION C

Answer any *ten* questions.

10×5=50

13. Explain the function of breather in a transformer.
14. How is relay used in protection scheme ? Explain with proper block diagram.
15. How can we reduce electrical losses in a distribution system ?
16. What is performance benchmarking ?
17. What are the tests performed on a transformer ?
18. Explain the role of CERC and SERC in tariff setting.
19. Define grid management.
20. What is load balancing ? How can it be achieved ?
21. Explain the main categories of KPIs against which the performance is measured.
22. Explain the causes of commercial losses.
23. What is the role of CRM in the power business sector ?

## SECTION D

Attempt any **two** questions.

2×10=20

24. Outline the aims and objectives of the Electricity Act, 2003. In what sense is it different from the Electricity Acts preceding it ?
  25. What factors contribute to T & D losses in urban areas ?
  26. Explain the equipment required for construction of an 11 kV/0.4 kV distribution sub-station.
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