

ACPDM

Assignment Booklet

**Advanced Certificate in Power
Distribution Management**

ACPDM

Course Code

BEE-001

BEE-002

BEE-003



School of Engineering and Technology
Indira Gandhi National Open University
Maidan Garhi, New Delhi – 110 068

(Jan / July 2019)

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Dear Student,

This booklet contains the assignments for the ACPDM – for the courses of BEE-001 BEE-002 & BEE-003. It is for your kind information that each course has one assignment, which is based on course materials of these courses. You are also advised to **write your responses in your own words**. This will improve your comprehension skills. Further, you may note that in case the Coordinator / Counselor may summarily reject your assignment response happens to be a copy of assignment response sheet submitted by another student, your assignment **and/or your marks might be made null and void**. Therefore, you are strongly advised not to allow any other student to copy it. The last date of submission of assignment is given against each assignment. You are advised not to wait for the last date to submit your assignments.

This to inform that minimum duration of this programme is 6 months and max. Duration is 2 years. Please note that if you fails to submit the assignment of any course in the registered session of 6 months then same set of assignment is valid for one year, after one year you have to upload fresh set assignment of current year for submission.

Please note , assignments submission are prerequisite to appear in your Term End Examination (TEE).

You need to submit the assignments as under:

For January Session- By 30th April ; For July Session- By 30th October

You can submit your assignment-

At your concern **Study Centre/Regional Centre** on or before the due date (in person).

Student are advised to get the acknowledgement/receipt while submitting assignment at Study Centre/Regional Centre concerned in order to fill up assignment submission details in your term end examination form.

We strongly feel that you should retain a photocopy of your assignment answer sheet duly acknowledged by the office of the Coordinator/ Study Centre/ Regional Centre to avoid any unforeseen situation.

For Formatting Your Assignments

- **On the top of the first page of your Tutor Marked Assignment (TMA) answer sheet**, please write the details exactly in the following format :

Enrolment No. _____	Date : _____
Course Code : _____	Course Title : _____
Name : _____	Address : _____

Signature :	E mail-----Mob.-----

- Please follow the above format strictly to facilitate evaluation and avoid delay.
- Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- Leave 3 cm margin on the left, top and bottom of your answer sheet.
- Your answer should be logical and coherent.
- While solving problems, clearly indicate the question number along with the part being solved. Recheck your work before submitting it.

Wishing you all good luck!

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TUTOR MARKED ASSIGNMENT**Course Code: BEE-001****POWER DISTRIBUTION SECTOR****Maximum Marks: 100****Weightage : 30%****Note :** All questions are compulsory and carry equal marks.

- Q.1 (a) Explain Aggregate Technical & Commercial Losses (AT&C losses). What is collection efficiency?
- (b) What factors contribute to T&D losses in urban areas? Discuss the role of field level staff in controlling AT & C losses. As a manager, how would you facilitate them?
- Q.2 (a) Which overhead conductor is best suited in theft prone areas and why?
- (b) What are the types of consumption recorded by a bivector meter? Is there any other indicator in the meter? If yes, name it.
- Q.3 (a) Consider following are the peak loads in the various regional grids in the country
- | | |
|---------------|----------|
| Northern | 25000 MW |
| Western | 30000 MW |
| Eastern | 20000 MW |
| North-eastern | 23000 MW |
| Southern | 7500 MW |
- Work out the total peak load in the country when
- (i) None of the grids are interconnected.
- (ii) If all the grids are interconnected the diversity factor of peak load is 1.1.
- (b) Name the key performance indicators for customer service.
- Q.4 (a) Which tests should be performed on the distribution transformer before installation? What are the two inherent errors in a current transformer?
- (b) Differentiate between preventive and breakdown maintenance.
- Q.5 (a) Discuss the role of CERC in tariff setting.
- (b) What are the measures a distribution utility can take to improve collection?
- Q.6 (a) What are the measures which can be adopted by a utility to reduce Distribution transformer failure rate?
- (b) How would the National Tariff policy help in realizing the aims and objectives of Electricity Act 2003?
- Q.7 (a) Explain various aspects of transformer testing. What measures can be taken to enhance the life and efficiency of the transformer.
- (b) What are the various type of Distribution network systems? Describe briefly.
- Q.8 (a) Explain the live line maintenance techniques and tools.
- (b) What is KPI? Explain advantages and disadvantages of Benchmarking?
- Q.9 (a) Who can engage in trading? Which body fixes the trading margins?
- (b) Explain the importance of key performance indicators for a utility.
- Q.10 (a) What are the measures involved in network reconfiguration?
- (b) Briefly explain the features of meters used for HT metering.

TUTOR MARKED ASSIGNMENT**Course Code: BEE-002****ENERGY MANAGEMENT AND IT APPLICATIONS****Maximum Marks: 100****Weightage : 30%****Note :** All questions are compulsory and carry equal marks.

- Q. 1 (a) What do you understand by Energy Management? Describe any case study related to energy management in Power Distribution.
- (b) Describe the benefits of GIS for managing the power distribution system.
- Q.2 (a) Explain in brief energy usage and energy balance. List steps to curtail air pollution due to energy usage.
- (b) What do you understand by energy auditing? Justify need for energy auditing with the help of suitable examples.
- Q.3 (a) What is ERP? Describe its application areas in distribution.
- (b) Describe what you can do as a consumer to contribute to DSM and energy efficiency improvement.
- Q.4 (a) Discuss the measures that should be taken for preventing and handling cases of electric shock.
- (b) Explain in brief different types of fire extinguishers.
- Q.5 (a) What are the problems in energy accounting?
- (b) Explain the two types of spot billing technology. What are their relative advantages and disadvantages?
- Q.6 (a) List the different tools used for customer analysis. How do they benefit the utilities?
- (b) Explain how IT can help in reducing AT & C losses and improving the efficiency of power distribution.
- Q.7 (a) Discuss undesirable effects of "Green House Effect" on Global Environment.
- (b) Describe in brief the formation of Acid Rain and its effects.
- Q.8 (a) What should be the disaster management plan for quick restoration of power supply in the event of earth quake?
- (b) State the benefits of AMR and outline the hardware requirements for it.
- Q.9 (a) Discuss the reasons why DSM has not been taken up actively by utilities in the domestic and commercial sectors.
- (b) What are the key areas of IT interventions in the power distribution sector?
- Q.10 (a) Discuss the usefulness of SCADA for improving the operations of a power distribution utility.
- (b) Explain why utilities should adopt integrated IT systems rather than standalone applications.

TUTOR MARKED ASSIGNMENT**Course Code :BEE-003****MANAGEMENT OF POWER DISTRIBUTION****Maximum Marks: 100****Weightage : 30%****Note:** All questions are compulsory and carry equal marks.

- Q.1 (a) How can IT be used in improving communication processes in a discom within organization, and with consumers? Give the components and their interconnections.
- (b) What measures should be taken to make inter-personnel communication effective?
- Q.2 (a) Describe the process of conflict.
- (b) What are the different types of conflicts taking place in business organizations?
- Q.3 (a) What is the process of ARR filing by discoms? Discuss in light of IEA 2003 provisions.
- (b) What are the provisions in IEA 2003 that endeavor to bring out transparency in the working of discoms?.
- Q.4 (a) How are wheeling charges computed? Give the procedure for source connected at 33kV and consumer connected at 11 kV.
- (b) Mention the components that make-up the annual annual revenue requirements of a discom. What is meant by IRR? Explain.
- Q.5 (a) What are the main driving factors of change in any business?
- (b) Explain various change models for business.
- Q.6 (a) Give a comparison of unit rate and turnkey contracts.
- (b) Explain various cost components of Detailed Project Report.
- Q.7 (a) Describe in brief the management processes of planning, controlling, organizing and leading.
- (b) With reference to cost management, explain following :
- (i) Material variance, (ii) Fixed overhead variance,
- (iii) Variable overhead variance, (iv) Labor variance, and (v) Sales variance.
- Q.8 (a) Describe how you can use the print and electronic media to sensitize your customers about timely payment of bills, and legalizing power connections.
- (b) Explain the concept of supply chain management in detail.
- Q.9 (a) Describe practices in complaint handling with reference to customer relationship management.
- (b) 'Customer relationship management has become an important area for public utilities'. Analyze this statement in context of any organization.
- Q.10 (a) Explain various investment evaluation methods.
- (b) Describe various aspects of cost volume profit (CVP) analysis.

