

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 2016 / July 2016)**

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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 30<sup>th</sup> April ; For July Session- By 30<sup>th</sup> October**

***You can submit your assignment-***

At your concern **Regional Centre** on or before the due date (in person). Student are advised to get the acknowledgement/receipt while submitting assignment at Regional Centre concerned in order to fill up assignment submission details in your term end examination form.

**OR**

You may also send your assignment answer sheets to the following Address:

The programme Coordinator  
ACPD M Programme  
Block-C, School of Engineering & Technology  
Indira Gandhi National Open University  
P.O. Maidan Garhi, New Delhi – 110068.

so as to reach there on or before the due date in order to send assignment receiving acknowledgement slip to you by post for TEE examination requirement.

**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) The power sector reforms were initiated around the early nineties, however the Indian Electricity Act 2003 accelerated the pace of reforms. Do you agree? If yes, justify with reference to the provisions in IEA 2003 and if No, explain why?
- (b) Why was the T&D loss assessment changed to AT&C loss determination in distribution? Hence explain the term AT&C loss. Discuss the role of field level staff in controlling AT & C losses. As a manager, how would you facilitate them?
- Q.2 (a) Outline the measures required for commercial loss reduction in the following areas :
- (i) Direct tapping by non consumers (ii) Direct tapping and theft by tampering of meter by consumers, and (iii) Metering, billing and collection deficiencies.
- (b) List and explain various factors contributing to high technical in power distribution utilities.
- Q.3 (a) Suggest a long term plan for reducing technical losses in the power distribution network of your area.
- (b) With the help of a Single Line Diagram indicate the switchgear and equipment used in a typical 33/11 KV sub-station. Mention the annual maintenance practices adopted.
- Q.4 (a) Write a note on key issues and challenges before the power distribution sector in India. Write the current demand and supply scenario of power in India. What measures have been taken to improve the demand supply gap scenario?
- Q.5 (a) Write a brief note on the important features of energy conservation act, 2001.
- (b) Discuss the salient features of the electricity act, 2003 and objectives of National Electricity Policy in brief.
- Q.6 (a) Discuss the role of central and state governments in power distribution sector reforms.
- (b) Are the current power distribution reforms sufficient to achieve the goal of providing reliable and quality power to all? Justify your answer.
- 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 measures which can be adopted by a utility to reduce Distribution transformer failure rate?
- Q.9 (a) Explain the importance of Key Performance Indicators (KPIs) in power business. Also identify KPIs for supply availability, reliability, consumer service, cost and profitability.
- (b) How Customer Relationship Management (CRM) can be applied in the organizations in the power business sector? Also discuss the role of data warehouse and data mining in CRM framework.
- Q.10 (a) Appreciate the role and significance of technological interventions in metering, billing and collection for the utility's revenue protection.
- (b) Explain the metering techniques used for LT and HT consumer 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) Discuss the need and procedure of energy accounting. Explain how energy accounting can benefit from the use of information technology?
- (b) Outline the various options for (i) Ensuring energy security, (ii) Improved resource management, and (iii) Use of energy efficient technologies.
- Q.2 (a) Discuss the need for energy auditing and its objectives and functions.
- (b) In your opinion, what problems will your utility encounter if it resorts to energy auditing? How can these be managed?
- Q.4 (a) Describe what you can do as a consumer to contribute to DSM and energy efficiency improvement.
- (b) Discuss the techniques for Demand Side Management (DSM) in power systems.
- Q.5 (a) Outline the earthing practices and procedures.
- (b) Discuss electrical safety procedures for working with :
- (i) Transformer, (ii) Overhead lines, (iii) Underground lines, (iv) Switchgear, and (v) High voltage equipment.
- Q.6 (a) Describe the major constituents of the disaster management system and their functions in context to power utilities.
- (b) What is business process reengineering? Discuss the steps that should be taken for managing the change brought about by the use of IT in organizations.
- Q.7 (a) Outline the causes of accidents in power distribution systems and the general measures for preventing them. Describe the first aid measures to help the victim of :
- (i) Electric shock, (ii) Burns, (iii) Physical shock, (iv) Heat exhaustion, and (v) Heat stroke.
- (b) Explain the major causes for fire outbreaks in a power utility. What techniques can be used for handling and preventing such fires?
- Q.8 (a) What is ERP? Discuss the benefits of using ERP in a power distribution utility.
- (b) What is SCADA? Discuss its usefulness for improving the operations of a power distribution utility?
- Q.9 (a) What is Geographic Information System (GIS)? Describe objectives and advantages of GIS in power distribution system.
- (b) Discuss various GIS applications for managing the power distribution network.
- Q.10 (a) List the different tools used for customer analysis. Outline their features. How do they benefit the utilities?
- (b) State the benefits of AMR and outline the hardware requirements for it. Discuss the aspects that should be kept in view while using AMR.

**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) Explain the concept of supply chain management in detail.
- (b) Describe in brief the management processes of planning, controlling, organizing and leading.
- Q.2 (a) Is it possible to give a true or a fair view of a company's position using accounting information? Discuss.
- (b) What are the provisions in IEA 2003 that endeavor to bring out transparency in the working of discoms?.
- Q.3 (a) Write various goals of organization communication.
- (b) What measures should be taken to make inter-personnel communication effective?
- Q.4 (a) What are different types of conflicts taking place in business organizations?
- (b) In your opinion, what should the role of a change leader be in facilitating the changes being brought about due to the power distribution reforms?
- Q.5 (a) What are the main driving factors of change in any business? Explain various change models for business.
- (b) What is meant by IRR? Mention the components that make-up the annual revenue requirements of a discom.
- Q.6 (a) Give a comparison of unit rate and turnkey contracts.
- (b) Explain various cost components of Detailed Project Report(DPR).
- Q.7 (a) Describe how you can use the print and electronic media to sensitize your customers about timely payment of bills, and legalizing power connections.
- (a) How are wheeling charges computed? Give the procedure for source connected at 33kV and consumer connected at 11 kV.
- Q.9 (a) Explain various investment evaluation methods.
- (b) Describe various aspects of cost volume profit (CVP) analysis.
- Q.8 (a) Describe practices in complaint handling with reference to customer relationship management.
- (b) 'Customer relationship management(CRM) has become an important area for public utilities'. Analyze this statement in context of any organization.
- Q.10 (a) Explain various financial ratios falling under the category of liquidity ratios.
- (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.

