

## قومی ترانہ

پاک سرزمین شاد باد! کشورِ حسین شاد باد!  
تو نشانِ عزمِ عالی شان ارضِ پاکستان  
مرکزِ یقین شاد باد  
پاک سرزمین کا نظام قوتِ اخوتِ عوام  
قوم، ملک، سلطنت پائندہ تابندہ باد!  
شاد باد! منزلِ مراد  
پرچم ستارہ و ہلال رہبرِ ترقی و کمال  
ترجمانِ ماضی شانِ حال جانِ استقبال  
سایہٴ خدائے ذوالجلال

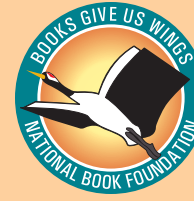


## NATIONAL BOOK FOUNDATION ISLAMABAD

Islamabad, Rawalpindi, Wazirabad, Wah Cantt, Faisalabad, Multan,  
Peshawar, Abbottabad, Dera Ismail Khan, Karachi, Sukkur, Rohri, Hyderabad,  
Larkana, Jacobabad, Khairpur, Quetta



## TEXTBOOK OF Principles of Electrical Engineering ET-115



## TEXTBOOK OF PRINCIPLES OF ELECTRICAL ENGINEERING

ET-115

Diploma of Associate Engineer  
Civil Technology

11



TECHNICAL EDUCATION & VOCATIONAL TRAINING AUTHORITY  
PUNJAB

Textbook of

# PRINCIPLES OF ELECTRICAL ENGINEERING

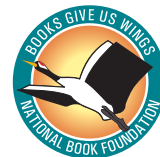
**ET-115**

**Diploma of Associate Engineer  
Civil Technology**

**11**



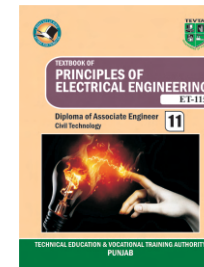
**TECHNICAL EDUCATION & VOCATIONAL TRAINING AUTHORITY  
PUNJAB**



**NATIONAL BOOK FOUNDATION  
ISLAMABAD**

© 2014 National Book Foundation, Islamabad. All rights reserved. This volume may not be reproduced in whole or in part in any form without prior written permission from the publisher.

**Textbook of**  
Principles of Electrical Engineering  
ET-115



Cover designed by: Hafiz Rafiuddin, Shahzad Ahmed

First Edition

Qty: 10000  
Code: STE-537  
Price: 160/-  
ISBN: 978-969-37-0716-8  
Printer: .....

For information about other National Book Foundation Publications, visit our  
Web site <http://www.nbf.org.pk> or call 92-51-9261125  
or Email us at: [books@nbf.org.pk](mailto:books@nbf.org.pk)