

Preface

The people's civilization setting up is built on scientific progress. Automotive industry occupies a top place in the different industrial fields. The automobiles have become pillar of our daily life. It is used in various life matters such as people transmission, goods transmission, and fire extinguisher vehicles as well as in airports and agriculture fields

The automotive technology studying has become an essential condition to collect all matters and components of automotives. This will lead to facilitate the maintenance, repair and quick trouble shouting.

This book "Engines" includes 7 modules which cover the syllabus of Engine trade. Each module has two basic parts, the theoretical information part and the practical training part. The theoretical part includes information and simplified figures to facilitate understanding the theory of operations. At the end of the theoretical part, there are different types of revision questions to help students to understand the unit .The practical part has detailed steps for assembly , disassembly , inspection and installation which assisted by figures , schematics and pictures to help the self understanding of information and procedures.

We hope that this textbook is a helpful for student, technician and learner in the field of automotive in order to raise the scientific and technological level of people who are working in this field.

This book is a good by – product between ministry of industry represented by PVTD, ITC and Korean government represented by KOICA and that is according to the *Egyptian Vocational Competence-based Qualifications (EVCQs)* prepared by the cooperation with the chamber of engineering industries certified by the *Scottish Qualifications Authority (SQA)*.

The agency of Korean International Co-operation has focused on automotive field in the field of training in order to obtain high skill technicians. The skill people are the motive force of industrial improvement and development.

For this reason, KOICA has qualified a number of training centers in EGYPT such as:

- Shobra Training Center 1993 – 1994
- Shobra Automotive Training Center 1998 -2000
- Moharrem Bek Automotive Training Center 2004 – 2006
- Embaba Automotive Training Center 2006 – 2008
- Kafr Elzyat Automotive Training Center 2008 – 2010
- Technical Secondary School in Luxor 2007 – 2008
- Training Center for Trainers in Cairo 2007 - 2008

A set of engineers and instructors have prepared the textbook. They travelled abroad to Korea in a technical course for this purpose. The textbook is revised by special Korean experts in the automotive field.

Last but not least we do appreciate the hard work made by ***Engineer Hazem Mamdouh Kamal*** (Automotive Engineering Department - Mattaria Faculty of Engineering - Helwan University) for his assistance in editing and reviewing this textbook, special thanks to him and to everyone paid an effort in developing this textbook.

We hope that this developed textbook help in automotive improvement. Last but not least, we will never forget to thank everybody who shared in this textbook.