



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 7 Examination in Engineering: August 2015

Module Number: ME7320

Module Name: Maintenance Management

[Three Hours]

[Answer all questions, each question carries 10 marks]

- Q1. a) Explain the generalised procedure for improving an existing maintenance system of a given production plant. [5.0 Marks]
- b) State and briefly explain five Key Performance Indicators (KPIs), which can be used in evaluating the status of a plant maintenance system. [5.0 Marks]
- Q2. a) In the modern world, ISO quality standards have become very popular among both production/service industries and the customers. Briefly explain the benefits both these parties can realise through such standardisations. [6.0 Marks]
- b) Provide short descriptions on the following quality standards. [4.0 Marks]
- i. ISO 9000
 - ii. ISO 14000
- Q3. a) Assume that you have been appointed as the in-charge of a production organisation. Explain how you will implement each step of the 5S concept in your organisation. [5.0 Marks]
- b) State and briefly explain four benefits of implementing the 5S concept in your organisation. [2.0 Marks]
- c) Briefly explain three NDT techniques and provide one suitable application of each. [3.0 Marks]
- Q4. a) Distinguish between Kaizen schemes and general idea generation schemes. [3.0 Marks]
- b) Justify Kaizen as a Key Performance Indicator (KPI) in a production organisation. [3.0 Marks]
- c) Propose a brief marking scheme for evaluating Kaizens. [4.0 Marks]

- Q5. a) Briefly explain the five pillars of the Total Productive Maintenance (TPM) concept. [5.0 Marks]
- b) Briefly explain three goals of TPM. [3.0 Marks]
- c) State four obstacles for the sustainability of TPM in an organisation. [2.0 Marks]
- Q6. a) Briefly explain how to use the “2-By-2 prioritisation” for identifying “Bad Actor” machines of a production plant. Also state four advantages gained by such an approach. [5.0 Marks]
- b) For any maintenance KPIs, there are pre-set targets. State three ways of estimating or setting such targets. [3.0 Marks]
- c) Maintenance documentation is one of the key communication methods used in maintenance management. State four major factors to be considered when designing such documents. [2.0 Marks]