OPERATIONS MANAGEMENT 3 A (BPJ33A3 & OPM33A3)

UNIVERSITY OF JOHANNESBURG

FACULTY OF ENGINEERING
(EXAM FIRST SEMESTER)

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

PROGRAMME	:	**NATIONAL DIPLOMA OPERATIONS MANAGEMENT**
SUBJECT	:	**OPERATIONS MANAGEMENT 3A**
CODE	:	**BPJ33A3 & OPM33A3**
DATE	:	**28th MAY 2018**
DURATION	:	**180 Minutes**
TIME	:	**08H30-11H30**
TOTAL MARKS	:	**100**
EXAMINER	:	**MR. NDALA YVES MULONGO**
INTERNAL MODERATOR	:	**DR. PULE KHOLOPANE**
EXTERNAL MODERATOR	:	**PROF KEM RAMDASS**
NUMBER OF PAGES	:	**2 PAGES**

INSTRUCTIONS TO CANDIDATES:

- ✓ Answer ALL questions.
- ✓ **THIS IS NOT AN OPEN BOOK TEST.**
- ✓ Write neatly and legibly
- ✓ NOTE: Marks will be awarded for theoretical knowledge, application of the theory and use of relevant examples.
- ✓ The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

QUESTION 1

1.1 The modern automotive industry in South Africa was launched in 1995 and has since become the leader in Africa of the automotive industry and now produces more than half a million automobiles annually of all types. Most of the cars manufacturing companies have been concentrated in the province of the Eastern Cape, Gauteng, and KwaZulu-Natal. To keep the automobile manufacturing plants running powerfully and smoothly, preventive maintenance is conducted to all automobile manufacturing plants every six months. Analyse five various types of preventive maintenance in accordance with the nature of its activities. [10]

1.2 South African Airways (SAA) purchased three aircrafts Boeing 777-333 from an American airplane manufacturing firm. The aircrafts are aimed at operating 4 days a week between Johannesburg and European countries. To predict the occurrence of potential failure, the maintenance department at SAA decided to use Statistical-based predictive maintenance, which is one of the types of predictive maintenance. Discuss four distinct methods of statistical-based predictive maintenance used to predict or identify the occurrence of failure. [8]

QUESTION 2

2.1 Cyril, a recently graduate from University of Johannesburg, just received a year-end bonus of R 1 000,000, which he has used to open a consulting maintenance company located in Johannesburg. After two years, Cyril maintenance firm has been selected to conduct the maintenance of JOHN ORR building situated at Doornfontein campus, University of Johannesburg. Draw a maintenance management system process and discuss each of its elements. [20]

2.2 You are a product development manager of a midsized plastic chairs manufacturing firm operating in Johannesburg. To sustain your business, you decide to launch your product within an international market. Draw a product life cycle system and discuss each of its phases. [14]

2.3 Sustainable Development is a concept that aims at meeting the needs of present generation without compromising the ability of future generation to meet their own needs. Appraise three different pillars of Sustainable Development. [6]

QUESTION 3

3.1 In your own words, discuss three factors that are used to identify the occurrence of a potential or functional failure. [6]

3.2 Name four advanced functions of Computerized Maintenance Management System. [4]

3.3 Appraise four different types of product strategies related to the success of product into the market. [8]

QUESTION 4

4.1 Discuss five different guidelines for reducing human error in maintenance. [10]

4.2 Human error may be defined as the failure to perform a specified task (or the performance of a forbidden action) that could lead to disruption of scheduled operations or result in damage to property and equipment. Based on a figure demonstrate the relation between system lifecycle versus various types of human error. [6]

4.3 Identify eight benefits associated with Enterprise Asset Management System during a product/plant life cycle. [8]

Good Luck [100]