UNIVERSITY OF JOHANNESBURG

FACULTY OF ENGINEERING AND BUILD ENVIRONMENT
DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT
SUPPLEMENTARY EXAMINATIONS

PROGRAMME	:	NATIONAL DIPLOMA: OPERATIONS MANAGEMENT
SUBJECT	:	OPERATIONS MANAGENENT 3
CODE	:	BPJ33A3
DATE	:	21 JULY 2014
TIME	:	(SESSION 2) 11:30 - 14:30
DURATION	:	3 HOURS
WEIGHT	:	50:50
TOTAL MARKS	:	107
NUMBER OF PAGES	:	3 (including cover page)
EXAMINERS	:	DR. P. KHOLOPANE
MODERATOR	:	Prof. T. TENGEN

INSTRUCTIONS:

ANSWER ALL QUESTIONS IN PROVIDED ANSWER BOOKS AND ENSURE THAT YOUR STUDENT NUMBER APPEARS ON ALL THE WORK THAT YOU HAND IN. THIS IS AN OPEN BOOK ASSESSMENT

REQUIREMENTS : ANSWER SCRIPTS; CALCULATOR.

Question 1 [5]
Explain Statistical-based Predictive Maintenance.

Question 2 [5]
Explain inventory management in your own words.

Question 3 [5]
Why do companies need a maintenance plan.

Question 4 [5]
Explain the Maintenance and Reliability Procedures.

Question 5 [12]
Name and explain the procedure to be followed on increased stakeholder scrutiny of safety performance.

Question 6 [5]
What is Risk Management?

Question 7 [5]
Name five Types of Risks.

Question 8 [8]
Explain why work order number is so important.

Question 9 [5]
Explain Work request in your own words.

Question 10 [5]
Why is it important to Implement ERP in an organisation.

Question 11 [5]
What is a corporate store?

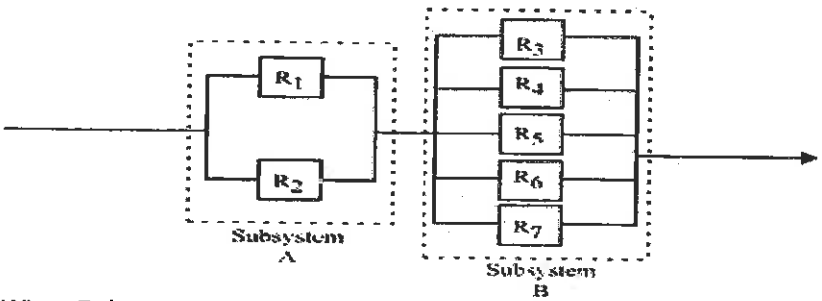
Question 12 [6]
Explain, with examples the application interface.

Question 13 [6]
What is the importance of CMMS?

Question 14 [5]
Name five impacts of CMMS.

Question 15 [10]
What are the overall requirements for successful scoping.

QUESTION 16 [5]
Calculate this system reliability of the system represented in the figure below;



When R 1 =.99, R2 = .80 R3 = .88, R4 = .75,R 5 =.99, R6 = .80 R7 = .88, of system A and B

Question 17 **[10]**

Given percentage failures of 5% and halfway through the testing, 10 circuit breakers failed. The number of hours of testing were 10000hours.

Calculate

a. number of circuit breakers. (2)
b. Number of failures per unit –hour. (4)
c. Number of failures per unit-year. (2)
d. If 1,100 [2200] motors receive circuit breakers installations, how many motors can we expect to fail during the following year. (2)

Formulae

Percentage failures [FR%] = Number of failures / Number of units tested x 100
Number of failures per unit hour [FR(N)]
FR(N)= number of failures/ Total tine – Non operating time
Number of failures per unit year = FR(N)x 24hrs x 365 days

Series $R_s = R_1 \times R_2 \times R_3$

Parallel = $[1 - (1-R_C)(1-R_E)]$
MTBF = 1/ FR(N)