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Courses » Machinery Fault Diagnosis And Signal Processing

Announcements **Course** Ask a Question Progress FAQ

## Unit 3 - Week 1

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### Course outline

[How to access the portal](#)**Week 0****Week 1**

- Lecture 1 : Introduction
- Lecture 2: Maintenance Principles
- Lecture 3: FMECA
- Lecture 4: Fault Diagnostics and Prognostics
- Lecture 5: Machine Learning in CBM
- Week 1: Lecture Materials
- Quiz : Assignment 1
- Feedback for Week 1

**Week 2****Week 3****Week 4****Week 5****Week 6****Week 7****Week 8****Week 9**

## Assignment 1

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-02-13, 23:59 IST**

1) 1 point  
Which type of maintenance is also known as condition based maintenance (CBM)

- a. Reactive
- b. Predictive
- c. Periodic
- d. Breakdown

- (a)
- (b)
- (c)
- (d)

**No, the answer is incorrect.****Score: 0****Accepted Answers:***(b)*

2) 1 point  
The risk priority number (RPN) is

- a. Minimum of the ranks of Severity (S), Occurrence (O), and Detection (D)
- b. Maximum of the ranks of Severity (S), Occurrence (O), and Detection (D)
- c. Sum of the ranks of Severity (S), Occurrence (O), and Detection (D)
- d. Product of the ranks of Severity (S), Occurrence (O), and Detection (D)

- (a)
- (b)
- (c)
- (d)

**No, the answer is incorrect.****Score: 0****Accepted Answers:***(d)*

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Assignment  
Solution

Develop

- (a)  
 (b)  
 (c)  
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(c)

4) Machine availability is defined as

- a.  $\frac{\text{Up time}}{\text{Up time} + \text{Down time}}$   
 b.  $\frac{\text{Up time}}{\text{Down time}}$   
 c. Up time  
 d. (Up time – Down time)

- (a)  
 (b)  
 (c)  
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

5) The failure rate is high in infant mortality zone of bath-tub curve because of

- a. Installation defects  
 b. Wrong original equipment manufacturer (OEM) specification  
 c. Unfamiliarity of the machine operator  
 d. All of the above

- (a)  
 (b)  
 (c)  
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(d)

6) Fault diagnosis consist of

- a. Fault detection  
 b. Fault isolation  
 c. Fault identification  
 d. All of the above

- (a)  
 (b)  
 (c)  
 (d)

No, the answer is incorrect.

Score: 0

1 point

1 point

1 point

Accepted Answers:

(d)

7) Fault prognostics is used for

1 point

- a. Fault identification
- b. Remaining useful life prediction
- c. Fault isolation
- d. Fault detection

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

8)

1 point

For a failure mode with Occurrence '5', Severity '2', and Detection '1', the RPN is

- a. 10
- b. 5
- c. 8
- d. 1

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

9) The FMECA should be performed

1 point

- a. During machine operation
- b. Early in the design process
- c. After machine failure
- d. At any time

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

10)

1 point

Following is (are) the element(s) of prognostics health management cycle

- a. Sensors
- b. Fault classification
- c. Prediction of fault evolution
- d. All of the above

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(d)

11) Which one is not a type of supervised learning?

1 point

- a. Regression
- b. Clustering
- c. Support vector machine
- d. k-Nearest Neighbor

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

12)

1 point

In artificial neural network (ANN) technique, multi-type signals can be used at a time for fault prediction

- a. True
- b. False

- (a)
- (b)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

13) Select the type(s) of FMECA

1 point

- a. Design FMECA
- b. Process FMECA
- c. System FMECA
- d. All of the above

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(d)

14) What are the objectives of FMECA? 1 point

- a. Identification of potential failure
- b. Evaluation of severity of failures
- c. Both a. and b.
- d. None of the above

- (a)
- (b)
- (c)
- (d)



No, the answer is incorrect.

Score: 0

Accepted Answers:

(c)

15) The useful period is also known as 1 point

- a. Uptime
- b. Down time
- c. Breakdown time
- d. Total time

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

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