

## Module 9: Exercise 1 on MTBF/MTTR

### Scenario:

A company has three components in a system and requires all three to be operational for 24 hours, Monday to Friday. Failure of component 1 occurs as follows:

- Monday = No failure.
- Tuesday = 5 a.m. to 7 a.m.
- Wednesday = No failure.
- Thursday = 4 p.m. to 8 p.m.
- Friday = 8 a.m. to 11 a.m.

### Task:

Calculate the MTBF and MTTR of component 1.

### Solution:

- MTBF is calculated as: Total uptime/Number of failures  
Total downtime = 2 hours on Tuesday + 4 hours on Thursday + 3 hours on Friday = 9 hours  
Total uptime =  $(5 \times 24) - 9 = 111$  hours  
So,  $MTBF = 111 / 3$   
= 37 hours
- MTTR is calculated as: Total downtime/Number of failures  
Total downtime = 2 hours on Tuesday + 4 hours on Thursday + 3 hours on Friday  
So,  $MTTR = (9 \text{ hours} / 3)$   
= 3 hours