

## Practice Exam for Overall Equipment Effectiveness

### QUESTIONS

- 1. In OEE, we calculate the performance of the equipment by comparing?**
  - Actual Run Time versus Planned Run Time
  - Good Parts versus Total Parts Produced
  - Actual production output against the theoretical production output
  - Actual Run Time versus the theoretical run time
  
- 2. What is the OEE value for process that has a Performance, Availability and Yield of 92%, 88% and 96%, respectively?**
  - 82.3%
  - 77.7%
  - 75.5%
  - 72.4%
  
- 3. You've been tasked with calculating the OEE of your production equipment and you want to calculate the availability of that equipment, what data must you collect to complete this calculation??**
  - Good Parts versus Total Parts Produced
  - Actual Run Time versus Planned Run Time
  - Actual production output against the theoretical production output
  - Actual Run Time versus the theoretical run time
  
- 4. What does TPM stands for?**
  - Total Preventive Maintenance
  - Total Productive Maintenance
  - Total Priority Maintenance
  - Total Primary Maintenance
  
- 5. What is the performance of a process that has a cycle time of 10 seconds per part and was able to produce 3800 parts after 11 hours of actual production run time?**
  - 91%
  - 92%
  - 93%
  - 96%

6. You run a 12-hour shift, with 1 hour of planned downtime for breaks and lunches. You record 60 minutes of downtime due to a lack of material and equipment maintenance. What is the availability for this process?
- 87%
  - 89%
  - 91%
  - 93%
7. What are the 3 elements of OEE?
- Performance, Availability, Yield
  - Performance, Availability, Downtime
  - Cycle time, Downtime, Uptime
  - Process time, Uptime, Downtime
8. What is the yield for a process that produces 3500 good parts out of 3800 total built?
- 95%
  - 91%
  - 89%
  - 92%
9. What is the availability for a process that had a scheduled planned time of 12.5 hours and 1.5 hours of unscheduled downtime?
- 87%
  - 88%
  - 89%
  - 90%
10. You run a 10-hour shift, with 90 minutes of planned downtime for breaks and lunches. You record 30 minutes of downtime due to a lack of material and equipment maintenance. What is the availability for this process?
- 91%
  - 94%
  - 97%
  - 99%

**11. What does OEE stands for?**

- Overall Equipment Efficiency
- Optimal Employee Effectiveness
- Overall Equipment Effectiveness
- Optimal Equipment Efficiency

**12. You've been tasked with calculating the OEE of your production equipment and you want to calculate the yield of that equipment, what data must you collect to complete this calculation??**

- Good Parts versus Total Parts Produced
- Actual run time versus planned run time
- Total parts compared to the planned run time
- Good parts compared to customer demand

**13. When thinking about the three elements of OEE, which one of them most closely aligns with one seven forms of waste:**

- Performance
- Availability
- Yield
- Output

**14. What is the performance of a process that has a cycle time of 5 seconds per part and was able to produce 7000 parts after 10 hours of actual production run time?**

- 91%
- 97%
- 93%
- 99%

**15. What is the yield for a process that produces 5,500 good parts out of 7,000 total built?**

- 63%
- 71%
- 78%
- 68%

## SOLUTIONS

### 1. In OEE, we calculate the performance of the equipment by comparing?

- Actual Run Time versus Planned Run Time
- Good Parts versus Total Parts Produced
- **Actual production output against the theoretical production output**
- Actual Run Time versus the theoretical run time

$$\text{Performance} = \frac{\text{Actual Output}}{\text{Theoretical Output}}$$

### 2. What is the OEE value for process that has a Performance, Availability and Yield of 92%, 88% and 96%, respectively?

- 82.3%
- **77.7%**
- 75.5%
- 72.4%

$$\text{Overall Equipment Effectiveness (OEE)} = \text{Performance} * \text{Availability} * \text{Yield} = 92\% * 88\% * 96\% = 77.7\%$$

### 3. You've been tasked with calculating the OEE of your production equipment and you want to calculate the availability of that equipment, what data must you collect to complete this calculation??

- Good Parts versus Total Parts Produced
- **Actual Run Time versus Planned Run Time**
- Actual production output against the theoretical production output
- Actual Run Time versus the theoretical run time

$$\text{Availability} = \frac{\text{Actual Run Time}}{\text{Planning Run Time}}$$

### 4. What does TPM stands for?

- Total Preventive Maintenance
- **Total Productive Maintenance**
- Total Priority Maintenance
- Total Primary Maintenance

### 5. What is the performance of a process that has a cycle time of 10 seconds per part and was able to produce 3800 parts after 11 hours of actual production run time?

- 91%
- 92%
- 93%
- **96%**

$$10 \text{ seconds per part} = 6 \text{ parts per minute} = 360 \text{ parts per hour (Theoretical Output)}$$

$$\text{Performance} = \frac{\text{Actual Output}}{\text{Theoretical Output}} = \frac{3800}{11 \text{ hours} * 360 \text{ parts per hour}} = \frac{3800 \text{ parts}}{3960 \text{ parts}} = 95.9\% \text{ or } 96\%$$

6. You run a 12-hour shift, with 1 hour of planned downtime for breaks and lunches. You record 60 minutes of downtime due to a lack of material and equipment maintenance. What is the availability for this process?

- 87%
- 89%
- **91%**
- 93%

$$\text{Availability} = \frac{\text{Actual Run Time}}{\text{Planning Run Time}} = \frac{10 \text{ Hours}}{11 \text{ Hours}} = 91\%$$

7. What are the 3 elements of OEE?

- **Performance, Availability, Yield**
- Performance, Availability, Downtime
- Cycle time, Downtime, Uptime
- Process time, Uptime, Downtime

$$\text{Overall Equipment Effectiveness (OEE)} = \text{Performance} * \text{Availability} * \text{Yield}$$

8. What is the yield for a process that produces 3500 good parts out of 3800 total built?

- 95%
- 91%
- 89%
- **92%**

$$\text{Yield} = \frac{\text{Good Parts Produced}}{\text{Total Parts Produced}} = \frac{3500}{3800} = 92\%$$

9. What is the availability for a process that had a scheduled planned time of 12.5 hours and 1.5 hours of unscheduled downtime?

- 87%
- **88%**
- 89%
- 90%

$$\text{Availability} = \frac{\text{Actual Run Time}}{\text{Planning Run Time}} = \frac{12.5 - 1.5}{12.5} = \frac{11}{12.5} = 88\%$$

10. You run a 10-hour shift, with 90 minutes of planned downtime for breaks and lunches. You record 30 minutes of downtime due to a lack of material and equipment maintenance. What is the availability for this process?

- 91%
- **94%**
- 97%
- 99%

$$\text{Availability} = \frac{\text{Actual Run Time}}{\text{Planning Run Time}} = \frac{\text{Planned Run Time (8.5)} - \text{Actual Downtime (0.5)}}{\text{Total Time (10)} - \text{Planned Downtime (1.5)}} = \frac{8 \text{ Hours}}{8.5 \text{ Hours}} = 94\%$$

11. What does OEE stands for?

- Overall Equipment Efficiency
- Optimal Employee Effectiveness
- **Overall Equipment Effectiveness**
- Optimal Equipment Efficiency

12. You've been tasked with calculating the OEE of your production equipment and you want to calculate the yield of that equipment, what data must you collect to complete this calculation??

- **Good Parts versus Total Parts Produced**
- Actual run time versus planned run time
- Total parts compared to the planned run time
- Good parts compared to customer demand

$$Yield = \frac{Good\ Parts\ Produced}{Total\ Parts\ Produced}$$

13. When thinking about the three elements of OEE, which one of them most closely aligns with one seven forms of waste:

- Performance
- Availability
- **Yield**
- Output

The **yield** of your equipment directly aligns with the “Defects” form of waste.

14. What is the performance of a process that has a cycle time of 5 seconds per part and was able to produce 7000 parts after 10 hours of actual production run time?

- 91%
- **97%**
- 93%
- 99%

*5 seconds per part = 12 parts per minute = 720 parts per hour (Theoretical Output)*

$$Performance = \frac{Actual\ Output}{Theoretical\ Output} = \frac{7,000}{10\ hours * 720\ parts\ per\ hour} = \frac{7,000\ parts}{7,200\ parts} = 97.2\% \text{ or } 97\%$$

15. What is the yield for a process that produces 5,500 good parts out of 7,000 total built?

- 63%
- 71%
- **78%**
- 68%

$$Yield = \frac{Good\ Parts\ Produced}{Total\ Parts\ Produced} = \frac{5500}{7000} = 78\%$$