

## Practice Exam for the 7 Management and Planning Tools

- 1. A machine shop is planning to move a line of machining equipment across town and any delays in the project will result in lost business. Which tool can be used to ensure that potential pitfalls in the project plan are identified and mitigated?**
  - Process Decision Program Chart
  - Flow Chart
  - Activity Network Diagram
  - Affinity Diagram
  
- 2. You're managing a complex project with multiple, on-going activities and timelines. What tool would help you determine the completion date for that project along with the most critical tasks?**
  - Flow Chart
  - Tree Diagram
  - Interrelationship Digraph
  - Activity Network Diagram
  
- 3. A group of engineers have conducted a survey of customers and received a large quantity of feedback regarding their product. What quality tool will best help them organize and analyze this feedback?**
  - Matrix Diagram
  - Tree Diagram
  - Interrelationship Digraph
  - Affinity Diagram
  
- 4. A team of subject matter experts have been assembled and brainstormed a large number of facts, data and ideas to determine the cause and effect relationships associated with a recent safety incident. What tool could be used to visualize and identify the primary causes of the safety incident?**
  - Check Sheet
  - Affinity Diagram
  - Interrelationship Digraph
  - Matrix Diagram

5. **A team of engineering's are performing root cause analysis, and are considering 3 different options as potential corrective actions. Which quality tool could be used to help the team reach a decision on the most appropriate CAPA?**
- Prioritization Matrix
  - Matrix Diagram
  - Scatter Plot
  - Interrelationship Digraph
6. **You're working to implement a complex corrective action that will involve multiple interrelated activities across various departments. You need to create a project plan and determine the critical path of the project. Which tool is most appropriate to accomplish this task?**
- Flow Chart
  - Tree Diagram
  - Interrelationship Digraph
  - Activity Network Diagram
7. **A catastrophic fault associated with your product recently occurred while in production. You're leading a team of engineers who have been tasks with identifying the events that led up to this failure mode. Which tool is most appropriate to break down this failure mode into its component parts?**
- Tree Diagram
  - Flow Chart
  - Pareto Chart
  - Matrix Diagram
8. **You're analyzing a complex process and want to communicate the relationship between the multiple factors associated with your process and your products functional requirements. Which tool is most appropriate to communicate this relationship?**
- Flow Chart
  - Fishbone diagram
  - Matrix Diagram
  - Process Decision Program Chart
  - Prioritization Matrix
9. **A team of various departments have been given the task of accomplishing a complex goal. They're holding a kick off meeting and wish to break the goal down into individual tasks. Which tool would be best suited to accomplish this?**
- Matrix Diagram
  - Pareto Chart
  - Histogram
  - Prioritization Matrix
  - Tree Diagram

**10. You're working through the DFSS process to re-design a critical component in your assembly. You've identified 3 possible new designs. Which tool might help you choose the final design?**

- Prioritization Matrix
- Matrix Diagram
- Scatter Plot
- Interrelationship Digraph

**11. You're working with your team to create annual objectives and you've facilitated a brainstorming exercise to identify new or changing objectives. What quality tool will best help organize and analyze this information?**

- Matrix Diagram
- Tree Diagram
- Interrelationship Digraph
- Affinity Diagram

**12. You've brainstormed a new failure mode where many various factors seem to have different and complex cause and effect relationships with each other, what tool could be used to visualize and identify the primary causes of this defect?**

- Prioritization Matrix
- Affinity Diagram
- Interrelationship Digraph
- Activity Network Diagram

**13. The Process Decision Program Chart is an extension of which of the 7 Quality Management & Planning Tools:**

- Prioritization Matrix
- Affinity Diagram
- Tree Diagram
- Activity Network Diagram
- Interrelationship Digraph

**14. Quality Function Deployment (QFD) is an application of which of the 7 Quality Management and Planning Tools:**

- Prioritization Matrix
- Matrix Diagram
- Affinity Diagram
- Activity Network Diagram
- Interrelationship Digraph

**15. Fill in the blank: A \_\_\_\_\_ facilitates brainstorming and organization of facts into themes of common characteristics.**

- Interrelationship Digraph
- Check Sheet
- Affinity Diagram
- Prioritization Matrix

**16. Fill in the blank: A \_\_\_\_\_ facilitates the brainstorming and analysis of disparate facts in an effort to identify the cause and effect relationships associated with complex problems.**

- Interrelationship Digraphs
- Matrix Diagram
- Affinity Diagram
- Activity Network Diagram

**17. Fill in the blank: A \_\_\_\_\_ is a visual tool that breaks down a broad goal into specific steps necessary to complete a complex project.**

- Interrelationship Digraph
- Matrix Diagram
- Process Decision Program Chart
- Tree Diagram

**18. You're designing a new product and now that you've frozen your design, you're working on designing the process to build that product. You want to communicate and visualize the various positive and negative relationships between the CTQs of your design and the critical process parameters in your process. Which tool would help you best accomplish this?**

- Flow Chart
- Fishbone Diagram
- Matrix Diagram
- Process Decision Program Chart
- Prioritization Matrix

**19. Fill in the blank: A \_\_\_\_\_ is a tool to define the relationship between the factors associated with a complex system.**

- Matrix Diagram
- Prioritization Matrix
- Interrelationship Digraph
- Tree Diagram

**20. Fill in the blank: A \_\_\_\_\_ is a decision-making tool weighs various options against decision making criteria.**

- Process Decision Program Chart
- Prioritization Matrix
- Matrix Diagram
- Interrelationship Digraph

**21. You're designing a new product and you have captured all of your customer needs. You've also translated those customer needs into design inputs and you want to analyze the relationship between all of your various inputs and customer needs, which tool would help you best accomplish this?**

- Flow Chart
- Fishbone Diagram
- Matrix Diagram
- Process Decision Program Chart
- Prioritization Matrix

**22. Fill in the blank: A \_\_\_\_\_ is a project planning too that facilitates the proactive identification of potential problems along with contingencies and countermeasures.**

- Tree Diagram
- Activity Network Diagram
- Interrelationship Digraph
- Process Decision Program Chart

**23. Fill in the blank: A \_\_\_\_\_ is a Project Planning and Management tool that defines the sequential tasks requires to complete a complex project, including the critical path.**

- Process Decision Program Chart
- Tree Diagram
- Activity Network Diagram
- Interrelationship Digraph

24. **You're implementing a corrective action that has been communicated to your regulatory agency with a due date that cannot be missed. What tool can be used to analyze your implementation strategy to minimize delays.**

- Process Decision Program Chart
- Activity Network Diagram
- Flow Chart
- Affinity Diagram

25. **You're designing a new product and you've got multiple design inputs and design outputs. You want to communicate and visualize the various positive and negative relationship between those design inputs and outputs. Which tool would help you best accomplish this?**

- Flow Chart
- Fishbone Diagram
- Matrix Diagram
- Process Decision Program Chart
- Prioritization Matrix

## Solutions for Practice Exam

1. A machine shop is planning to move a line of machining equipment across town and any delays in the project will result in lost business. Which tool can be used to ensure that potential pitfalls in the project plan are identified and mitigated?

- **Process Decision Program Chart**
- Activity Network Diagram
- Flow Chart
- Affinity Diagram

The **Process Decision Program Chart** is meant to facilitate a review of a project plan to identify potential issues and develop contingencies and counter-measures to ensure project success.

2. You're managing a complex project with multiple, on-going activities and timelines. What tool would help you determine the completion date for that project along with the most critical tasks?

- Flow Chart
- Tree Diagram
- Interrelationship Digraph
- **Activity Network Diagram**

The **Activity Network Diagram** is a **Project Planning and Management** tool that defines the sequential tasks requires to complete a project, including an analysis of the critical path of a project.

3. A group of engineers have conducted a survey of customers and received a large quantity of feedback regarding their product. What quality tool will best help them organize and analyze this feedback?

- Matrix Diagram
- Tree Diagram
- Interrelationship Digraph
- **Affinity Diagram**

The **Affinity Diagram** is a tool that **facilitates brainstorming** and **organizes facts and data** into **themes or groups of common characteristics**.

4. A team of subject matter experts have been assembled and brainstormed a large number of facts, data and ideas to determine the cause-and-effect relationships associated with a recent safety incident. What tool could be used to visualize and identify the primary causes of the safety incident?

- Check Sheet
- Affinity Diagram
- **Interrelationship Digraph**
- Matrix Diagram

The **interrelationship digraph** is a tool you can use to analyze a complex problem to identify the cause and effect relationships that exist between **disparate facts**.

5. A team of engineering's are performing root cause analysis, and are considering 3 different options as potential corrective actions. Which quality tool could be used to help the team reach a decision on the most appropriate CAPA?

- **Prioritization Matrix**
- Matrix Diagram
- Scatter Plot
- Interrelationship Digraph

The **prioritization matrix** is a **decision-making tool** that allows the user to **weight various options** against **decision making criteria** to establish an objective basis for decision making.

6. You're working to implement a complex corrective action that will involve multiple interrelated activities across various departments and you've been asked to create a project plan and determine the critical path of the project. Which tool is most appropriate to accomplish this task?

- Flow Chart
- Tree Diagram
- Interrelationship Digraph
- **Activity Network Diagram**

The **Activity Network Diagram** is a **Project Planning and Management** tool that defines the sequential tasks requires to complete a project, including an analysis of the critical path of a project.



7. A catastrophic fault associated with your product recently occurred while in production. You're leading a team of engineers who have been tasked with identifying the events that led up to this failure mode. Which tool is most appropriate to break down this failure mode into its component parts?

- **Tree Diagram**
- Flow Chart
- Pareto Chart
- Matrix Diagram

The **Tree Diagram** is a versatile tool, and can be easily adapted into a **fault tree** which analyzes fault conditions to identify causes and factors that contribute to the fault

8. You're analyzing a complex process and want to communicate the relationship between the multiple factors associated with your process and your products functional requirements. Which tool is most appropriate to communicate this relationship?

- Flow Chart
- Fishbone Diagram
- **Matrix Diagram**
- Process Decision Program Chart
- Prioritization Matrix

The **Matrix Diagram** is a tool that is meant to explore, visualize and communicate the strength of relationships between different factors associated with a complex process, project or product.

9. A team of various departments have been given the task of accomplishing a complex goal. They're holding a kick off meeting and wish to break the goal down into individual tasks. Which tool would be best suited to accomplish this?

- Matrix Diagram
- Pareto Chart
- Histogram
- Prioritization Matrix
- **Tree Diagram**

The **Tree Diagram** is a visual tool to **identify (via brainstorming) & outline all the necessary steps to complete a complex project**. This tool **breaks down a broad goal into specific tasks**.

10. You're working through the DFSS process to re-design a critical component in your assembly. You've identified 3 possible new designs. Which tool might help you choose the final design?

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