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Exam : **CPIM-8.0**

Title : Certified in Planning and Inventory Management (CPIM 8.0)

Version : DEMO

1.Which of the following environments is most suitable for the use of kanban systems?
A. Short product life cycles
B. High levels of customization
C. Intermittent production
D. Stable and predictable demand
Answer: D
Explanation:
Kanban is a pull system that uses visual signals to trigger the replenishment of materials or parts. It works best in environments where the demand is stable and predictable, and the production process is continuous and standardized. Kanban helps to reduce inventory, waste, and lead time by synchronizing the production and consumption rates. Kanban is not suitable for environments where the demand is volatile, the product life cycle is short, the production process is intermittent, or the product is highly customized. These factors would require frequent changes in the kanban system and reduce its effectiveness.
References:
• CPIM Part 1 Study Guide, Chapter 4: Demand Management, Section 4.3: Pull Systems and Kanban
• CPIM Part 2 Study Guide, Chapter 1: Execution of Operations, Section 1.4: Lean Production and JIT
• What Is the Kanban System? - Investopedia
• Kanban - What Is it? | Lean Enterprise Institute

2.In the design and development of a manufacturing process, process engineers would most likely be responsible for decisions relating to:
A. lead times.
B. production capacity.
C. product reliability.
D. routing sequences.
Answer: D
Explanation:
Process engineers are responsible for designing, implementing, controlling, and optimizing industrial processes, especially continuous ones such as the production of petrochemicals1. One of the decisions that process engineers would most likely make is the routing sequence, which is the order of operations or activities that are performed on a product or material as it moves through the production process2. The routing sequence affects the process performance, efficiency, quality, and cost, and it requires careful planning and analysis by the process engineers. Option A is not correct, because lead times are the time intervals between the initiation and completion of a process or a project3. Lead times are influenced by many factors, such as demand, capacity, inventory, scheduling, and supply chain management, and they are not solely determined by the process engineers. Option B is not correct, because production capacity is the maximum amount of output that a process or a system can produce within a given period of time4. Production capacity depends on the availability and utilization of resources, such as materials, labor, equipment, and facilities, and it is not only decided by the process engineers. Option C is not correct, because product reliability is the probability that a product will perform its intended function without failure for a specified period of time under specified conditions5. Product reliability is affected by many aspects, such as product design, quality control, testing, maintenance, and customer feedback, and it is not the sole responsibility of the process engineers.

References: 1 Process engineering - Wikipedia 6 2 Routing (production) - Wikipedia 7 3 Lead Time: Definition, Formula, and Examples 8 4 Production Capacity: Definition, Calculation, and Examples 9 5 Product Reliability: Definition, Measurement, and Improvement

3.Which of the following strategies is most appropriate for a business unit with a low relative market share in a high-growth market?
A. Using excess cash generated to fund other business units
B. Investing in the acquisition of competitors
C. Investing in projects to maintain market share
D. Designing product improvements to protect market share
Answer: C
Explanation:
For a business unit with a low relative market share in a high-growth market, the most appropriate strategy is investing in projects to maintain market share. In a high-growth market, opportunities for expanding or solidifying market share are significant. A business unit with a low market share can benefit from investing in projects that enhance its competitive position, such as improving operational efficiency, innovation in products or services, and marketing efforts. These investments aim to strengthen the unit's market presence and capitalize on the growth potential of the market. This approach is more suitable than using excess cash for other units, acquiring competitors, or just focusing on product improvements, as it directly addresses the need to build a stronger market position in a growing market.

4.Based on the above table, calculate the mean absolute deviation (MAD).

Month	Actual	Forecast	Variation
1	80	50	-30
2	50	40	-10
3	50	75	25
4	75	65	-10
Total	**255**	**230**	**-25**

A. -25
B. 6.25
C. 18.75
D. 20
Answer: B
Explanation:
The mean absolute deviation (MAD) is a measure of variability that indicates the average distance between observations and their mean. MAD uses the original units of the data, which simplifies

interpretation. Larger values signify that the data points spread out further from the average. Conversely, lower values correspond to data points bunching closer to it. The mean absolute deviation is also known as the mean deviation and average absolute deviation1.
The formula for the mean absolute deviation is the following:
MAD=(|X–X|)/N
Where:
• X = the value of a data point
• X = the mean of the data points
• |X – X| = the absolute deviation of a data point from the mean
• N = the number of data points
• = the summation symbol

Based on the table, we can calculate the MAD as follows:
• X=(80+50+50+75)/4=63.75
• |X – X| = |80 - 63.75|, |50 - 63.75|, |50 - 63.75|, |75 - 63.75| = 16.25, 13.75, 13.75, 11.25
• MAD = (16.25 + 13.75 + 13.75 + 11.25) / 4 = 6.25
Therefore, the correct answer is B.
References: = 1 CPIM Part 2 Exam Content Manual, Domain 3: Plan and Manage Demand, Task 3.1: Develop, validate, and review demand plans, p. 23.

5.In which of the following situations would you use an X-bar chart?
A. Track the number of defects that are found in each unit.
B. Measure the difference between the largest and the smallest in a sample.
C. Determine the average value of a group of units.
D. Estimate a subgroup variation.
Answer: C
Explanation:
An X-bar chart is a type of control chart that is used to determine the average value of a group of units. It is also known as a mean chart. It plots the sample means of subgroups of units over time and compares them with the center line and the control limits. An X-bar chart is useful for monitoring the central tendency of a process and detecting any shifts or trends in the process mean. It is often used in conjunction with an R-chart, which measures the subgroup variation.
References:
Managing Supply Chain Operations, Chapter 9: Quality Management, Section 9.2: Statistical Process Control, Subsection 9.2.1: Control Charts
CPIM Exam Content Manual, Module 8: Quality, Technology and Continuous Improvement, Section 8.1: Quality Management, Subsection 8.1.2: Statistical Process Control, Subsubsection 8.1.2.1: Control Charts