



# Certified Maintenance & Reliability Professional (CMRP)

Total Question:  $(15+148) = 163$

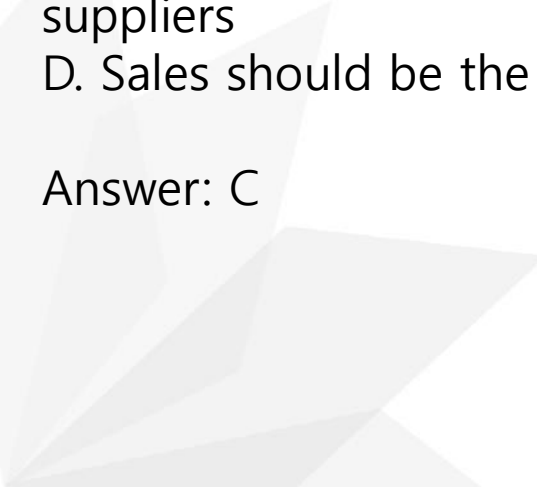


## Question No 10:

What relationship should Maintenance and Reliability Teams have with customers and suppliers for optimum effectiveness?

- A. Purchasing should be the only communicators with suppliers
- B. Management should be the only communicators with customers and suppliers
- C. Team members should be involved in communicating with customers and suppliers
- D. Sales should be the only department communicating with customers.

Answer: C



**Q11)** . Which list of elements below are the most important to be evaluated and coordinated during the planning phase of a major shutdown of your operating area (i.e. annual turnaround)?

**Options**

- A. Historical turnaround maintenance days, operations desired work list, prior turnaround work lists
- B. Available turnaround budget, equipment condition, budgeted down-days
- C. Condition and remaining life of critical equipment, value of production throughput, labor and materials availability and cost
- D. Heavy lifting equipment availability, labor cost and availability, operations requested down-days

**Answer: A**

**Q12)** What is the statistical average and the population standard deviation of the following series of numbers? 1.30, 1.25, 1.50, 1.12, 1.35, 1.38

**Options**

- A. Statistical average = 1.32; standard deviation= 0.128
- B. Statistical average = 1.50; standard deviation= 0.25
- C. Statistical average = 1.32; standard deviation= 1.50
- D. Statistical average = 0.128; standard deviation= 1.32

**Answer: A**

**Q13)** What is the relationship between leading indicator metrics and lagging indicator metrics in the field of Maintenance and Reliability?

**Options**

- A. Lagging indicators are measures that reflect accomplishment of goals, while leading indicators are measures of what must be done to improve results.
- B. Leading indicators are measures that reflect accomplishment of goals while lagging indicators are measures of what must be done to improve results.

C. Leading indicators are low level measures that reflect accomplishment of goals, while lagging indicators are measures of what must be done to improve results.

D. Leading indicators are used by management, while lagging indicators are used by personnel on the shop floor.

**Answer: B**

**Q14)**As the maintenance manager at a new plant (facility) you are developing the maintenance workforce strategy for start-up. Select the best workforce attributes for maximum effectiveness, assuming that unit labor costs are equal?

**Options**

A. An annual bid and selection of a maintenance labor contractor is performed, using unitcosting of tasks normally required.

B. A managing contractor is brought on site to handle all aspects and provision of maintenance labor.

C. Multi skilled mechanical crafts (trades) and instrument electrical crafts (trades) are hired and developed.

D. Operations performing minor maintenance and company multi-skilled technicians performing complex maintenance tasks.

**Answer: D**

**Q15)** Preventive Maintenance is defined as: Maintenance tasks, including inspection, service and or replacement, conducted at regular, scheduled intervals of calendar or operating time established to avoid failure based on average statistical anticipated lifetime. There are cautions regarding the application of PM: No more than "A" percent of total failures are time based, wear out, in nature. .... thus. PM is an ineffective avoidance action for about \*B" percent of probable failures.

**Options**

A. A = 20; B = 80

B. A = 40; B = 60

C. A = 60; B = 40