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Final Exam

Continuing Education Course #356
Industrial and Systems Engineering The Fundamentals

1. IIES principles involve knowledge and skills in a wide variety of disciplines; require a broad system perspective and the ability to work well with people.

- a. true
- b. false

2. Industrial Engineering is concerned with the design, improvement, and installation of:

- a. integrated systems of people, material and information
- b. integrated systems of people, material, information, equipment and energy
- c. specialized systems knowledge and mathematical skills
- d. engineering principles and methods of analysis

3. The goal of Industrial Engineering is to set quality and cost standards for delivering goods and services to business and industry

- a. true
- b. false

4. To accomplish its goal industrial engineering involves “hard” as well as “soft science to make operations perform well. Which of the following is not a soft science?

- a. employee performance
- b. motivation
- c. equipment
- d. initiative

5. Which of the following is/are needed in order to conduct methods engineering subsystem activity?

- a. Process Description
- b. Process Equipment
- c. Process Operation
- d. all of the above

6. Workflow analysis uses a diagram called a Process Flow Chart.

- a. true
- b. false

7. The objective of Work Measurement is to set production rates allowing time for personal needs, fatigue and delay. Setting production rates uses which of the following methods:

- a. Time study
- b. Estimation from Historical data
- c. Predetermined Time Standards
- d. all of the above

8. Personal, Fatigue, and delay time are subtracted from Normal Time.

- a. true
- b. false

9. Material Handling involves the protection, storage and control of material throughout their manufacturing process at which of the following stage(s):

- a. warehousing
- b. distribution
- c. consumption
- d. disposal
- e. all of the above

10. Ergonomics is concerned with worker safety and health and is based on the science of how humans behave both physically and psychologically.

- a. true
- b. false

11. The objective of production control is to schedule and regulate the various operations of the production process.

- a. true
- b. false

12. Manufacturing production control requires that the physical layout of machinery and equipment is positioned for safe and smooth flow of:

- a. material
- b. information and work
- c. material, work, and information
- d. work and information

13. Inventory Control provides for an orderly flow of material to ensure that at the different stages of production the material:

- a. is of the right quantity and quality
- b. is mostly of the right quality
- c. with minimum effort and cost
- d. a & c
- e. all of the above

14. Which of the following is (are) classified as manufacturing inventory?

- a. raw materials
- b. component parts
- c. supplies
- d. work in process
- e. all of the above

15. When controlling inventory it is important to distinguish between dependent and independent demand. Dependent demand is defined as the need for an item that is a direct result of the need for some other item.

- a. true
- b. false

16. Independent demand is the same as Dependent demand.

- a. true
- b. false

17. Dependent demand uses a Reorder Point (ROP) system that triggers an action to replenish inventory stock when:
- ○ a. stock quantity is equal to maximum daily usage
- ○ b. stock quantity falls to a minimum amount
- ○ c. stock quantity is equal to daily usage
- ○ d. none of the above

18. Economic Order Quantity (EOQ) is the order quantity that minimizes the total holding and ordering cost for a year.
- ○ a. true
- ○ b. false

19. Economic Order Quantity (EOQ) formulas are the same for all companies.
- ○ a. true
- ○ b. false

20. Independent demand for inventory control uses the Material Requirements Planning (MRP) system and is defined as the demand for various items to meet the external need of products. It requires:
- ○ a. identifying quantity requirements using “Bills of Material”
- ○ b. determining quantity on hand from inventory records
- ○ c. purchasing quantity needed if not available
- ○ d. based on sales forecast
- ○ e. all of the above

21. The purpose of Quality Control is to establish quality and safety standards for manufactured products.
- ○ a. true
- ○ b. false

22. Quality Control is typically associated with statistical approaches. Which is not considered a statistical approach?
- ○ a. Check Sheet
- ○ b. Pareto Chart
- ○ c. Cause-and-Effect Diagram
- ○ d. Process Flow Chart

23. Manufacturing Quality Control includes a standard practice of periodic scheduled inspections using attribute and variable data for specific products.
- ○ a. true
- ○ b. false

24. Check Sheets for variable data collection involves recording inspection data on a scale having a data range that includes an acceptable tolerance level.
- ○ a. true
- ○ b. false

25. Quality Control attribute inspection is also called Go-No-Go inspection.
- ○ a. true
- ○ b. false

26. The Pareto Chart is a statistical tool that is used to select the most critical operating problems that do not meet standard and need to be corrected. It is
- ○ a. true
- ○ b. false

27. The Cause-and-Effect diagram also known as the fishbone diagram model is used to graphically depict causes that lead to an effect (problem defect). The following categories are used in the diagram:

- a. Material, Standards
- b. Control, Procedures
- c. Equipment, People
- d. all of the above

28. A Process Flow Chart is used to follow an operator and examine each process step to further define the root cause of a problem defect.

- a. true
- b. false

29. Organizations select an operations process for continuous improvement for two reasons; 1) To reduce the cost of goods and services, 2) To increase revenue.

- a. true
- b. false

30. To reduce the cost of goods and services uses the process analysis methods to determine results while increase revenue applies the present value method to make financial decisions seeking the larger value.

- a. true
- b. false