Continuing Education Course #153
Decision Making
in Engineering Planning and Design

1. Qualitative methods are preferred in engineering,:
- a. True,
- b. False.

2. Projects can be evaluated for:
- a. efficiency,
- b. effectiveness,
- c. both of the above,
- d. none of the above.

3. The categories of conditions for decisions include:
- a. certainty,
- b. uncertainty,
- c. risk,
- d. all of the above.

4. Linear Programming is associated with decisions under conditions of:
- a. certainty,
- b. uncertainty,
- c. risk,
- d. all of the above.

5. Linear Programming problem solution methods include:
- a. graphical technique,
- b. Simplex Method,
- c. both of the above,
- d. none of the above.

6. CPM is used for decisions under Uncertainty:
- a. True,
- b. False.

7. In CPM the terms task, activity and event all mean the same thing:
- a. True,
- b. False.

8. Both CPM and PERT are used under the same assumed decision conditions:
- a. True,
- b. False.

9. Free, Open-Source programs that utilize the Simplex Method are available:
- a. True,
- b. False.

10. In CPM every event except the start must have a predecessor task/activity:
- a. True,
- b. False.

11. Decision making under conditions of Risk is the predominant form of decision making:
- a. True,
- b. False.

12. A “payoff table” can be used for investigating decisions under conditions of Uncertainty:
- a. True,
- b. False.

13. Enumeration of outcomes can always be used to define probability:
- a. True,
- b. False.

14. Polling is used in the Delphi Technique:
- a. True,
- b. False.

15. Enumeration of outcomes and relative frequency approaches to probability provide identical results:
- a. True,
- b. False.

16. The axiomatic approach to probability uses three fundamental axioms:
- a. True,
- b. False.

17. The Venn Diagram is a useful tool for visualization of probability concepts:
- a. True,
- b. False.

18. The intersection of two sets that are mutually exclusive contains no elements:
- a. True,
- b. False.

19. The union of two sets that are mutually exclusive contains no elements:
- a. True,
- b. False.

20. Bayes’ Theorem defines conditional probability:
- a. True,
- b. False.

21. The medical example using Bayes’ Theorem shows that tests with false-positive results can alter medical diagnosis probabilities:
- a. True,
- b. False.

22. Bayes' Theorem can be used to show that information can have a monetary value:
- a. True,
- b. False.

23. Expected value is defined as a product of a monetary amount times its probability of occurring:
- a. True,
- b. False.

24. PERT task/activity estimates are needed for:
- a. minimum time estimates,
- b. maximum time estimate,
- c. most-likely time estimate,
- d. all of the above.

25. PERT assumes task/activities have an underlying "Beta" probability distribution:
- a. True,
- b. False.