

SUB- IE&QC

1. The objective of scientific layout is
 - a) to produce better quality of product
 - b) to utilize maximum floor area
 - c) to minimize production delays
 - d) all of these

2. The probabilistic/ expected time is given by (where t_o = Optimistic time, t_p = Pessimistic time, and t_n = Most likely time)
 - a) $\frac{t_o + t_p + t_n}{3}$
 - b) $\frac{t_o + 2t_p + t_n}{4}$
 - c) $\frac{t_o + 4t_p + t_n}{5}$
 - d) $\frac{t_o + t_p + 4t_n}{6}$

3. For a product layout the material handling equipment must
 - a) Have full flexibility
 - b) Employ conveyor belts, trucks etc.
 - c) Be a general purpose type
 - d) Be designed for a particular application

- 4 . Which of the following layouts is suited for mass production?
 - a) Process
 - b) Product
 - c) Fixed position
 - d) Plant

5. . The artificial activity, which indicates that an activity following it can't be started unless the preceding activity is complete, is known as
 - a)Event
 - b) Dummy
 - c) Free float
 - d) Artificial

6. PERT
 - a) Provides an approach for keeping planning up-to-date
 - b) Provides a way for management to require that planning be done on a uniform and logical basis

- c) Permits management to foresee quickly the impact of variations from the plan
- d) All of the above

7. The probability distribution of activity times in PERT follows following distribution

- a) Normal b) Binomial c) Beta d) Exponential

8. Which of the following are the guidelines for the construction of a network diagram?

- a) Each activity is represented by one and only one arrow in the network
- b) Dangling must be avoided in a network diagram
- c) Dummy activity consumes no time or resource
- d) All of the above

9. ABC analysis deals with

- a) Analysis of process chart
- b) Flow of material
- c) Ordering schedule of job
- d) Controlling inventory costs money

10. Which of the following layouts is suited to job production?

- a) Process b) Product c) Fixed position d) Plant

11. . The product layout

- a) Lowers overall manufacturing time
- b) Requires less space for placing machines
- c) Utilizes machine and labour better
- d) All of these

12. The time of completing a project in network analysis is given by following time of the critical activity meeting at the final triode

- a) Early start b) latest start c) Early finish d) Latest finish

13. The EOQ in inventory theory refers to

- a) Average level b) Optimum level c) Warehouse capacity d) Break even analysis

14. Production cost refers to prime cost plus

- a) factory, administration, sales overheads and profit
- b) factory, administration and sales overheads
- c) factory and administration overheads
- d) factory overheads

15. The advantage of product layout is

- a) Lower total materials handling cost and total production time.
- b) Less work in process
- c) Less floor area required per unit of production
- d) All of these

16. The advantage of process layout is

- a) Less duplication of equipment and greater flexibility of production
- b) Better control of complicated or precision processes
- c) Easier to handle breakdown of equipment
- d) All of these

17. Critical Path Net Work helps an engineer

- a) To concentrate his attention on critical activities
- b) To be cautious for avoiding any delay in the critical activities to avoid delay of the whole project
- c) To divert the resources from noncritical advanced activities to critical activities
- d) All of the above

18. The disadvantage of product layout is

- a) Skilled labour to operate machines
- b) Production time is longer, requiring more goods in inventory
- c) High initial investment for the specialized facilities
- d) High cost of inspection

19. Inventory control in production, planning and control aims at

- a) Achieving optimization
- b) Acceptable customer service at low capital investment in inventory
- c) Ensuring against market fluctuations
- d) Discounts allowed in bulk purchase

20. When slack of an activity is negative

- a) the activity is critical and any delay in its performance will delay the completion of whole project
- b) It represents that a programme falls behind schedule and additional resources are required to complete the project in time
- c) It represents a situation where extra resources are available and the completion of project is not delayed
- d) All of the above

21. Break even analysis is a

- a) long term analysis
- b) short term analysis
- c) average of short and long term analysis
- d) any one of these

22. A critical activity has

- a) zero slack

- b) average slack
- c) maximum slack
- d) minimum slack

23. A PERT network has three activities on critical path with mean time 3, 8 and 6 and standard deviations 1, 2 and 2 respectively. The probability that the project will be completed in 20 days is

- a) 0.80
- b) 0.84
- c) 0.90
- d) 0.50

24. Which one of the following statements is not correct?

- a) PERT is activity oriented and CPM is event oriented
- b) In PERT, three time estimates are made, whereas in CPM only one time estimate is made
- c) In PERT slack is calculated whereas in CPM floats are calculated
- d) Both PERT and CPM are used for project situation.

25. If the demand for an item is doubled and the ordering cost is halved then EOQ

- a) Remains unchanged
- b) Increases by a factor of 1.414
- c) Is doubled
- d) Is halved

26. Setup costs do not include

- a) Labour cost of setting up machines
- b) Ordering cost of raw material
- c) Maintenance cost of the machines
- d) Cost of processing the work piece

27. Which of the followings are the benefit of inventory control

- 1. Improvement in customers relationship.
- 2. Economy in purchasing.
- 3. Elimination of the possibility of duplicate ordering.

Select the correct answer using the code given below:

- a) 1, 2 and 3
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1 and 3 only

28. The type of layout used for manufacturing steam turbines, is

- a) Product layout
- b) Process layout
- c) Fixed position layout
- d) Any one of these

29. The type of layout used for manufacturing Aeroplane, is

- a) Product layout
- b) Process layout
- c) Fixed position layout
- d) Any one of these

30. PERT stands for

- a) Programme Evaluation and Review Technique
- b) Planning Estimation and Resulting Technique
- c) Programme Estimation and Reporting Technique
- d) Process Estimation and Review Technique

31. A dummy activity in a network diagram

- a) is an artificial activity
- b) is represented by a dotted line
- c) does not consume time or resources
- d) all of these

32. In inventory control, the economic ordering quantity is obtained by the quantity whose procurement cost is equal to inventory carrying cost.

- a) True
- b) False

33. Product layout is best suited where

- a) One type of product is produced.
- b) Product is standardized.
- c) product is manufactured in large quantities
- d) all of the above

34. Break even analysis consists of

- a) fixed expenses
- b) variable cost
- c) sales revenue
- d) all of these

35. Slack represents the difference between the

- a) earliest completion time and normal expected time
- b) earliest completion time and latest allowable time
- c) normal expected time and earliest completion time
- d) latest allowable time and normal expected time

36. Simplex method is the method used for

a) Network analysis

b) Value analysis

c) Queuing Theory

d) Linear programming

37. If TL is the largest allowable event occurrence time, total activity slack (s) is equal to

a) $L_i - E_i$

b) $L_j - E_j$

c) $E_j - E_i$

d) Both (a) and (b)

38. Six sigma is a business driven, multi-dimensional structured approach to

a) Reducing process variability

b) Increasing customer satisfaction

c) Lowering defects and improving process

d) All of these

39. The main purpose of the measure phase of DMAIC is to

a) Determine the customer requirements

b) Develop solutions

c) Find root causes

d) Set baseline data to understand how the process is currently performing

40. Six sigma can be defined as

a) A representation of variation

b) A summary statistic

c) Permission to improve processes

d) All of these

41. The DMAIC stands for

- a) Define, Measure, Analyze, Improve and control
- b) Develop, Measure, Analyze, Improve and Control
- c) Define, Measure, Analysis, Implement, Control
- d) None of these

42. Main purpose of the define phase is to

- a) Select a project
- b) Select a team
- c) Decide on which data to collect
- d) Get agreement on the project's purpose, goals

43. Which part in quality management is the critical part ?

- a) Performance measurement
- b) Customer's view
- c) Systematic approach
- d) Process of thinking

44. Which of the following is false for communication in TQM ?

- a) Forceful
- b) Open involvement
- c) It should be clear
- d) 3 way communication

45. Which statement is correct for TQM ?

S1: Design of the formal system is one time effort.

S2: TQM is a management philosophy.

- a) T, T
- b) F, F
- c) F, T
- d) T, F

46. What is included in quality assessment in TQM ?

- a) Strategic quality planning
- b) Quality and operational results
- c) Management of process quality
- d) All of the above

47. Core principles of the TQM

- a) Customer and process orientation only
- b) Continuous improvement only
- c) Process orientation and continuous improvement only
- d) Continuous improvement, process and customer orientation

48. Which factor is the basis of decision making in TQM ?

- a) Opinions only
- b) Facts only
- c) Both opinions and facts
- d) Neither of them

49. Which of the following concepts are incompatible with JIT.

a) Local optimization

b) the EOQ model

c) Inspect once at the end of the process

d) All of these

50. Which of the diagrams below is the most applicable to the 80/20 rule?

a) Pareto diagram

b) Histogram

c) Fishbone diagram

d) Range chart