

VPM's
Program: EpMBA
Batch: 13

Second Semester Examination September 2018

Total Quality Management			
Roll No		Marks	60 Marks
Total No. of Questions	60	Duration	2 Hours
Total No. of pages		Date	02.09.2018

Note - Put circle on correct answer

1. The most effective method for industrial problem solving uses
 - a) rational approach
 - b) Creative approach
 - c) systematic approach
 - d) both rational and intuitive approaches.

2. Different aspects of products and services considered by the customer for evaluating its quality are termed as -----
 - a) determinants of quality
 - b) approaches to quality
 - c) dimensions of Quality
 - d) concept of quality

3. When addressing large, complex problems, the most common approach used in industry which provides a strong sense of order is the -----
 - a) rational approach
 - b) Creative approach
 - c) systematic approach
 - d) Intuitive approach

4. "If the company has to succeed in the market, it must pursue all the dimensions of quality at once." Which of the following options is the most appropriate for this statement?
 - a) Yes, it must
 - b) it may or may not
 - c) it is neither necessary nor practicable
 - d) none of the above

5. Which of the following is not a step in rational problem solving approach?
 - a) Define the problem
 - b) Quickly decide the solution
 - c) Examine all potential causes for the problem
 - d) Search for and identify all alternatives to resolve the problem.

6. The main disadvantage of rational problem solving approach is -----
 - a) being unsystematic
 - b) considering only few aspects of the problem
 - c) it may take a long time to finish
 - d) emphasizing quick solution

7. Framework for improvement of quality proposed by -----encapsulates 14 points
 - a) Juran
 - b) Deming
 - c) Ishikawa
 - d) Crosby

8. Which of the following is not a dimension of quality of a product?
 - a) Performance
 - b) Features
 - c) Reliability
 - d) Cost competitiveness

9. ----- was originator of PDCA cycle and founder of the control charts
 - a) Taguchi
 - b) Deming
 - c) Shewhart

d) Shigeo Shingo

10. The Design Of Experiment is a strategy of ----- so that reliable and valid conclusions can be drawn efficiently, effectively and economically.
 - a) industrial experimentation
 - b) intuitive problem solving
 - c) production problem solving
 - d) system development
11. Control on quality of incoming raw materials & the outgoing finished goods is exercised through a technique called as -----
 - a) process control
 - b) acceptance sampling
 - c) control chart
 - d) scatter diagram
12. Objective of in process inspection is -----
 - a) defect correction
 - b) defect detection
 - c) defect prevention
 - d) defect segregation
13. ----- involves selection of a subset of individuals from within a statistical population to estimate characteristics of the whole population
 - a) statistical process control
 - b) statistical quality control
 - c) sampling
 - d) process capability study
14. In sampling inspection, the risk of rejecting a good or conforming lot is known as -----
 - a) supplier's risk
 - b) consumer risk
 - c) producer risk
 - d) unavoidable risk

15. Which of the following steps in experimental design is often overlooked by the top level management
- a) define and detail the problem
 - b) generate all possible solutions
 - c) generate objective assessment criteria
 - d) choose the best alternative
16. Sampling provides a ----- means of verification that a production lot conforms to the requirements of technical specifications.
- a) precise
 - b) rational
 - c) accurate
 - d) generic
17. Identify the parameter that is not applicable to the statement given below. "Design of Experiment approach to engineering problem-solving ensures the generation of engineering conclusions which are----"
- a) valid
 - b) defensible
 - c) intuitive
 - d) supportable
18. Maximum percentage of defectives that is acceptable as a long-term average is known as -----
- a) Lot Tolerance Percent Defective (LTPD)
 - b) Acceptable Quality Level
 - c) Limiting Quality
 - d) Rejectable Quality Level
19. In experimental design Blocking is achieved by ----- randomization.
- a) increasing
 - b) restricting
 - c) mixing with

- d) neutralizing
20. The technique of testing a random sample of output from a process to determine whether the process is producing items within a preselected range is called as -----
- a) random sampling inspection
 - b) statistical quality control
 - c) statistical process control
 - d) process capability study
21. The general rule in experimental design is : "----- what you can; ----- what you cannot."
- a) compare
 - b) block
 - c) replicate
 - d) randomize
22. In production process, the variation in the output that can be traced to a specific reason or a factor like say machine wear is due to -----
- a) chance causes
 - b) assignable causes
 - c) natural causes
 - d) non assignable causes
23. The production process is said to be in a state of control or "stable" when it is acted upon by only ---
- a) assignable causes
 - b) attributable causes
 - c) chance causes
 - d) root cause
24. In DOE ----- is needed to account for the variation and uncertainty among items and treatments
- a) randomization
 - b) replication
 - c) comparison
 - d) blocking

25. To ensure that production process does not produce any non conforming part, what should be the relationship between control limits and specification limits?
- a) control limits are narrower than specification limits
 - b) control limits are wider than specification limits
 - c) control limits are same as specification limits
 - d) control limits need not be related to specification limits
26. Dispersion of a production process is a measure of its -----
- a) reliability
 - b) accuracy
 - c) precision
 - d) controllability
27. ----- is the function of how far process average is from design average
- a) Accuracy
 - b) Variability
 - c) Consistency
 - d) Conformity
28. In DOE ----- strengthens the experiment's reliability and validity.
- a) randomization
 - b) replication
 - c) comparison
 - d) blocking
29. ----- is necessary for conclusions drawn from the experiment to be correct, unambiguous and defensible
- a) randomization
 - b) replication
 - c) comparison
 - d) blocking
30. When a process is thought to be in control when it is actually out of statistical control, is known as -----
- a) type 1 error
 - b) type 2 error
 - c) producer error

- d) consumer error
31. In DOE ----- is used where it is not possible to have independent measurements to a traceable standard.
- a) randomization
 - b) replication
 - c) comparison
 - d) blocking
32. In X bar chart, the vertical axis shows-----
- a) sample size
 - b) average of the means of samples taken from a process
 - c) sample number
 - d) time when samples were taken
33. -----of the product indicates its fitness for use under varying conditions.
- a) sturdiness
 - b) reliability
 - c) robustness
 - d) maintainability
34. In DOE, which parameter is expressed in decibels?
- a) Signal
 - b) Response
 - c) Noise
 - d) Signal to noise ratio
35. DOE is superior to conventional 'one change at a time' experimental methods because it allows a ----- on the significance to the output when input variables are acting in combination with one another.
- a) decision
 - b) judgment
 - c) direction
 - d) prediction

36. The job of an experimental designer involves selection of appropriate control factors and their settings so that the deviation from the ideal is minimum at a low cost. This is known as -----
- a) experimental design
 - b) minimum sensitivity design
 - c) high sensitivity design
 - d) reliable design
37. In industrial experiment, a----- is the meaningful or useful information or input.
- a) response
 - b) signal
 - c) noise
 - d) disturbance
38. In DOE terminology, the irrelevant data or unwanted signal is termed as -----
- a) response
 - b) signal
 - c) noise
 - d) output
39. Which characteristic of production process is indicated by R chart?
- a) central tendency
 - b) stable state
 - c) variability
 - d) statistically controlled state
40. ----- are the parameters that are beyond the control of the designer.
- a) noise factors
 - b) independent variables
 - c) control factors
 - d) dependent variables

41. The parameters that can be specified by the experimental designer are -----
- a) noise factors
 - b) independent variables
 - c) control factors
 - d) dependent variables
42. Identify the factor that is not covered by the definition of reliability
- a) Specified performance
 - b) certainty of performance
 - c) period of performance
 - d) operating conditions for giving performance
43. In reliability analysis, the mean lifetime of the item or the average time that an item will function before it fails is called as
- a) Mean Time Between Failures (MTBF)
 - b) Mean Time To Failure (MTTF)
 - c) Mean Time to Repair (MTTR)
 - d) Mean Failure Rate (MFR)
44. Identify the correct mathematical relationship from the options given below
- a) $MTBF = MTTF + MTTR$
 - b) $MTTF = MTBF + MTTR$
 - c) $MTTR = MTBF + MTTF$
 - d) $MFR = MTTF + MTTR$
45. In the classification of quality costs, warranty claims fall under
- a) prevention costs
 - b) appraisal costs
 - c) internal failure costs
 - d) external failure costs

46. In industrial experiment the ----- is called the response.
- a) input
 - b) signal
 - c) noise
 - d) output
47. A small group of volunteers from the workers who meet regularly to search for solutions to work related problems are called -----
- a) small group activity
 - b) kaizen
 - c) quality circle
 - d) cross functional team
48. In “1: 10 : 100” rule pertaining to Quality Costs, the figures relate to
- a) prevention cost, appraisal costs & failure cost
 - b) appraisal cost, prevention cost and failure cost
 - c) prevention cost, internal failure cost and external failure cost
 - d) appraisal cost, failure cost and prevention cost
49. Which item given below is not an appraisal cost?
- a) preparation of Quality Manual
 - b) inspecting incoming materials
 - c) conducting quality audit
 - d) pre shipment inspection of finished goods
50. Process capability C_p is approximately defined as ratio of -----
- a) specification width to process width
 - b) process width to specification width
 - c) allowable spread of process to actual spread of process
 - d) process width to 6s

51. When $C_p < 1$, the process is -----
- a) just able to meet product specifications
 - b) not going to meet product specifications at all times
 - c) able to meet product specifications consistently
 - d) stable and in statistical control which will always produce conforming products
52. In industrial experimentation ----- can be either controllable or uncontrollable variables.
- a) inputs
 - b) signals
 - c) noise
 - d) outputs
53. The document in which every single process carried out in the organization is addressed by specifying who, how, what, when of the process is called as -----
- a) Standard Operating Procedure (SOP)
 - b) Quality Manual
 - c) Process Sheet
 - d) Quality Plan
54. DOE tries to identify what are the ----- in a process?
- a) noise factors
 - b) key factors
 - c) control factors
 - d) disturbing factors
55. Identify the element which is not the characteristic of quality awards instituted by governments of various countries
- a) based on TQM concept
 - b) take holistic approach
 - c) consider all abstract and subjective characteristics of quality
 - d) insist on visible results

56. Award given by Government of India for recognition of quality
- a) Malcolm Baldrige National Quality Award (MBNQA)
 - b) Deming Prize
 - c) Golden Peacock Award
 - d) ISO 9001 certification
57. Which is the obstacle in implementing TQM in the organization?
- a) Customer focus
 - b) company- wide definition of quality
 - c) excessive emphasis on short term financial results
 - d) Total Employee Involvement
58. Six sigma improvement methodology involves the steps of -----
- a) Define, Measure, Analyse, Improve, Control
 - b) Plan, Do , Check , ACT
 - c) Customer, Measurement Yardstick, Process, Employees
 - d) Identify , Define, Investigate, Analyse, Solve , Confirm
59. In six sigma approach, defect has wider connotation and means -----
- a) non conforming product
 - b) failure to deliver what the customer wants
 - c) output of unstable process
 - d) product likely to exceed specification limits
60. Well chosen experimental designs -----the amount of "information" that can be obtained for a given amount of experimental effort.
- a) maximize
 - b) minimise
 - c) neutralize
 - d) intensiy
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