



MBA DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2021)

First Semester

MASTER OF BUSINESS ADMINISTRATION

P21MBC1109: Operations Management

COURSE OUTCOMES

- CO1:** Explain the concepts and applications of operations management in business organization for achieving competitive advantage
- CO2:** Propose suitable tools and techniques of Operation Management.
- CO3:** Display analytical skills in the application of suitable tools governing quality for effective business decisions making.

Time: Three Hours

Maximum Marks: 100

PART A (30Q x 01 Marks = 30 Marks) Answer any 30 questions only

1. Master production Scheduling and aggregate planning will be one and the same, if the number of products in the planning is _____ CO1 [K₁]
 - a) One
 - b) Two
 - c) Many
 - d) None of the above
2. Hospital System is an example of _____ CO3 [K₁]
 - a) Project
 - b) Job-shop
 - c) Flow shop
 - d) None of the above
3. ERP training system fails due to CO1 [K₁]
 - a) lack of top management support
 - b) lack of adequate resources
 - c) lack of proper training
 - d) All of these
4. When the delivery schedules are difficult to be met, then _____ decision is selected CO3 [K₁]
 - a) buy
 - b) make
 - c) a & b
 - d) None of the above
5. The main advantages of MRP –II system is CO1 [K₁]
 - a) Improved working capital for inventory
 - b) Improved cash flow through quicker deliveries
 - c) Inaccurate inventory records
 - d) Reduced quality and quality control
6. The number of product varieties that can be manufactured in mass production is CO2 [K₁]
 - a) Only one
 - b) Only two
 - c) Few varieties in large volumes.
 - d) The large varieties in small volumes
7. The primary purpose of mean absolute deviation in demand forecasting is to CO1 [K₁]
 - a) Seasonally adjust the forecast
 - b) Measure the forecast accuracy
 - c) Eliminate forecasting errors
 - d) Estimate the trend line
8. Which of the following is not a type of qualitative forecasting CO2 [K₁]
 - a) Scenario writing

- b) Intuitive approaches
c) Weighted moving average method
d) Delphi method
9. Select true or false CO1 [K₁]
a) The consumer survey method is suitable for new products
10. Select true or false CO1 [K₁]
a) In regression analysis, one or more independent variables can be used to predict the value of a single dependent variable
11. One of the product examples for fixed position plant layout is CO2 [K₁]
a) Cars manufacturing
b) Paper mill
c) Aeroplane manufacturing
d) Air conditioning manufacturing
12. One of the product examples for process layout is CO2 [K₁]
a) Repair workshop
b) Welding shop
c) Engineering college
d) Cement manufacturing plant
13. The layout problem occurs because of the following : CO1 [K₁]
a) Change in product design
b) Introduction of new product
c) Market changes
d) All of these
14. X bar Chart is a control chart used to control a _____ Quality CO1 [K₁]
a) Variable
b) Attribute
c) Both a & b
d) None of the above
15. A _____ is process that combines with manufacturing process to ensure that a manufacturing process produces quality perfect products CO1 [K₁]
a) Quality model
b) Quality Assurance
c) Quality System
d) None of the above
16. In the formula for control limits for X bar, $\bar{X} \pm A_2R$ is the _____ CO2 [K₁]
a) Upper range
b) Lower Range
c) Mean
d) None of the above
17. The ISO 9001 standards are CO1 [K₁]
a) A set of product specifications for all industries
b) More widely adopted in US than in Europe
c) Known as the Baldrige Standards in the USA
d) Quality Management procedures that address leadership, documentation, and record keeping
18. Quality check sheets are used for CO1 [K₁]
a) Prevent project audits
b) Ensure that quality assurance steps were followed
c) Keep quality inspectors are busy
d) Inform Top Management where failures occur
19. Who among the following is associated with contributions to quality control in Operation Management CO1 [K₁]
a) Charles Babbage
b) Henry Ford
c) Frank Gilbrath
d) W. Edward Deming
20. TQM is a Strategy that is designed to change the quality of product to satisfy customer needs by using the concepts of _____ CO1 [K₁]
a) Benchmarking
b) PLC analysis
c) Product Maintenance
d) Brainstorming
21. Non conformance is an expense of CO2 [K₁]
a) Defects of quality

- b) Cost of quality
c) Profit of Quality
d) Quality of product
22. Which of the following is a Quality function? CO1 [K₁]
a) Performance
b) Features
c) Reliability and durability
d) All of the above
23. Select true or false CO1 [K₁]
a) Deming applied the model of the scientific method to quality control
24. Animal products with infections is a _____ Hazard CO1 [K₁]
a) Physical
b) Chemical
c) Biological
d) Psycho Socio
25. In _____ layout , similar machine and services are located together CO1 [K₁]
a) Process
b) Product
c) Group technology
d) Fixed position
26. _____ layout combines the benefits of two popular basic layouts CO1 [K₁]
a) Process
b) Product
c) Group technology
d) Fixed position
27. Facility location problem with quantity and qualitative data will have a _____ solution CO2 [K₁]
a) Definite
b) A range of
c) Infeasible
d) None of the above
28. The objective of facility location problem is to select the best site for location facilities such that _____ CO2 [K₁]
a) A given measure of performance is optimised
b) A given set of measures of performance is optimised collectively
c) Both a & b
d) None of the above
29. Factors affecting the health and safety at work are _____ CO2 [K₁]
a) Environmental
b) Health & Safety
c) Both a & b
d) None of the above
30. Heat is a _____ Hazard CO2 [K₁]
a) Physical
b) Chemical
c) Biological
d) Psycho Socio
31. Juran's model of optimal quality costs includes which of the following costs? CO2 [K₁]
a) Production costs
b) Prevention costs
c) Appraisal cost
d) Both a & b
32. _____ method is used to forecast for only one period in to the future CO2 [K₁]
a) Moving average
b) Exponential method
c) Both a & b
d) Regression
33. _____ of a system is the rate of output of goods or services under full scale operating conditions CO2 [K₁]
a) Design capacity
b) System Capacity
c) System efficiency
d) None of the above
34. The ship building industry commonly employs _____ layout CO2 [K₁]
a) Process

- b) Product
- c) Group Technology
- d) Fixed position

35. For overcoming Ergonomic hazard we CO2 [K₁]

- a) Match the man to job
- b) Provide the right tool to work
- c) Encourage to practice right postures
- d) All of the above

PART B (5Q x 6 Marks = 30 Marks) Answer any 5 questions only

36. List out the major differences between goods and service production CO1 [K₁]

37. What factors will you keep in mind while selecting the location? Specify the factors for manufacturing unit? CO2 [K₂]

38. For six periods forecasts and actual demand have been tracked and given in the following table. Calculate Mean absolute deviation (MAD), Mean square error (MSE) and Mean absolute percent error (MAPE) CO3 [K₃]

t	Demand D	Forecast F
1	170	200
2	230	195
3	250	210
4	200	220
5	185	210
6	180	200

39. What are quantitative and qualitative methods of forecasting? Explain briefly about each? CO1 [K₁]

40. Define the different type of Health & Safety hazards and give examples for each. CO2 [K₂]

41. Explain purpose of control charts and the X bar – R Chart procedure for fixing control limits? CO1 [K₁]

Part – C (4Qx10 Marks = 40 marks) Answer any 4 questions only

42. Explain in detail the TQM framework explaining the contribution of Quality Gurus, their principles and practices, tools and techniques to realize product and services CO2 [K₃]

43. A textile manufacturing company wants has orders for the next one year as given in the table. The Production manager has to decide which type of production system he needs to finalise based on the cost analysis. Suggest a suitable production system CO3 [K₂]

Quarter	Quantity in nos
Spring	80,000
Summer	50,000
Fall	120,000
Winter	150,000

Hiring Cost / worker = \$ 100

Firing Cost / worker = \$ 500

Production cost / part = \$ 2.00

Inventory carrying cost = \$ 0.50 / part

Production / employee per quarter = 1000

Beginning work force = 100 workers

44. Describe Product layout, Process layout, Group layout, Fixed position layout with examples. Compare product and process layouts. CO2 [K₁]

45. Assume you an upcoming entrepreneur and planning to start a manufacturing company or a service organization. Decide your product or service you propose to offer and list your mission, goals, strategy, resource planning, your choice of location, layout, the quality, health and safety systems you propose to adopt CO2 [K₄]

46. Explain the center of gravity method for solving location problems and solve the following problem. CO3 [K₄]

Consider the following data on locating a new facility which has to serve 5 different existing facilities. The existing plants coordinates are (30,20), (40,50), (30,30), (15,30) and (20,40). The number of trips of loads per year from the new plant to various existing plant location are 500,900,400,900,800 and 1600 respectively. Determine the optimum location for the new plant such that the distance moved (cost) in transporting the materials to the existing facilities is minimized. Use the center of gravity method.
