



SOURASHTRA COLLEGE (AUTONOMOUS), MADURAI – 4
 (An Institution affiliated to Madurai Kamaraj University)
 (Re-Accredited with B+ Grade by NAAC)
SUMMATIVE EXAMINATIONS – NOVEMBER 2022

**M.B.A.
Quantitative Methods**

Time: 3 Hours**Max. Marks: 75**

Section – A

Answer ALL the questions**(10x1= 10 Marks)****Choose the correct answer**

1. _____ is the set that contains no elements
 - a) Novel set
 - b) Neutral set
 - c) Enumeration set
 - d) Null set

2. A sum will double itself at a simple interest p.a. in 8 years. The simple interest is
 - a) 10%
 - b) 10.5%
 - c) 12%
 - d) 12.5%

3. If the A.M of 14, 16, x, 25, 21 be 19, then the value of x is
 - a) 16
 - b) 19
 - c) 12
 - d) 21

4. The measure of dispersion which ignores signs of the deviations from central value is _____
 - a) Range
 - b) Standard deviation
 - c) Mean deviation
 - d) Quartile deviation

5. _____ numbers are computed by multiplying quantity weights and item prices in determining the market basket worth for a given year.
 - a) Simple aggregate index
 - b) Average of price relative index
 - c) Weighted aggregate price index
 - d) None of the above

6. Rank correlation method was developed in 1904 by _____.
 - a) Karl Pearson
 - b) Edward Spearman
 - c) Karl Edwards
 - d) Edward Dolman

7. Regression equation is also named as
a) Predication equation b) Estimating equation
c) Line of average relationship d) All the above
8. Two events are said to be independent if
a) each outcome has equal chance of occurrence
b) there is the common point in between them
c) one does not affect the occurrence of the other.
d) both events have only one point
9. The primary goal of time-series analysis is to create _____.
a) linear relationship between variables
b) to prove the relationship between variables
c) forecasts of the future
d) none of the above
10. Which of the following is not a component of time series?
a) Trend b) Cyclical variation
c) Seasonal variation d) Neo classical variation

Section – B

Answer ALL the questions

(5 x 7 = 35 Marks)

11.a) Find $A^2 + 3A - 2I$

Where $A = \begin{bmatrix} 1 & 3 \\ 5 & 7 \end{bmatrix}$

(OR)

b) Explain the difference between Permutation and Combination

12.a) Find Quartile deviation and its Coefficient from the following data:
20, 28, 40, 12, 30, 15 and 50

(OR)

b) Explain the difference between Mean Deviation and Standard Deviation.

13.a) Calculate Rank Correlation coefficient for the following data

| | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|----|----|
| x | 80 | 64 | 54 | 49 | 48 | 35 | 32 | 29 | 20 | 18 | 15 | 10 |
| y | 36 | 38 | 39 | 41 | 27 | 43 | 45 | 52 | 51 | 42 | 40 | 50 |

(OR)

b) Elucidate the types of Index numbers

14.a) A box contains 5 green balls and 3 red colour balls. Find the probability of selecting 3 green colour balls one by one without replacement

(OR)

b) Enumerate briefly the applications of Probability in Business Management

15.a) A coin is tossed 12 times. What is the Probability of getting exactly 7 heads?

(OR)

b) Review the characteristics of a Normal distribution

Section – C

Answer any THREE questions

(3 x 10 = 30 Marks)

16. Calculate

a) if the interest is simple.

b) if the interest is compounded annually (Ex)

Mr. A has deposited ₹ 6,000 in a saving account. Bank pays interest at a rate of 9% per year. Compute the amount of interest that will be earned over 5-year period:

17. Calculate Mean and Median. The number of days that students were absent from school due to sickness in one year was recorded.

| | | | | | |
|--------------------------------|-------|--------|---------|---------|---------|
| Number of days off sick | 0 - 5 | 5 - 10 | 10 - 15 | 15 - 20 | 20 - 25 |
| Frequency | 12 | 11 | 10 | 4 | 3 |

18. Calculate index number of prices for the following data by
 a) Laspeyre's (b) Paaschee's (c) Fisher's and (d) Bowley's Methods

| Commodity | 2013 | | 2014 | |
|------------------|--------------|-----------------|--------------|-----------------|
| | Price | Quantity | Price | Quantity |
| A | 5 | 14 | 3 | 18 |
| B | 8 | 18 | 6 | 25 |
| C | 3 | 25 | 1 | 40 |
| D | 15 | 36 | 12 | 48 |
| E | 9 | 14 | 7 | 18 |
| F | 7 | 13 | 5 | 19 |

19. Examine the data and find the regression equation X on Y

| | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| x | 158 | 160 | 163 | 165 | 167 | 170 | 172 | 175 | 177 | 181 |
| y | 163 | 158 | 167 | 170 | 160 | 180 | 170 | 175 | 172 | 175 |

20. Appraise the following data and Fit a straight line trend by the method of least squares for the following data.

| | | | | | | | |
|--------------|------|------|------|------|------|------|------|
| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Index | 40 | 45 | 46 | 42 | 47 | 50 | 46 |

Reg. No. _____

Sub. Code: 21MBAC22

Date: 30.11.2022 A.N.



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SUMMATIVE EXAMINATIONS – NOVEMBER 2022

M.B.A.
Marketing Management

Time: 3 Hours

Max. Marks: 75

Section – A

Answer ALL the questions (10x1= 10 Marks)
Choose the correct answer

- 1 _____ is the father of Modern Marketing
a) Abraham Maslow b) Wunderman
c) Peter Drucker d) Philip Kotler
- 2 Marketing is a process which aims at _____
a) Production b) Profit Making
c) Customer Satisfaction d) Selling products
- 3 The internal environment of market not consists of one option mentioned below.
a) Owner b) Employees c) Competitors d) Machines
- 4 Demand for a product can be assessed based on the technique _____
a) SWOT analysis b) Trend analysis
c) BCG Matrix d) GE 9 cell matrix
- 5 _____ identify and profile distinct group of buyers to focus.
a) Market segmentation b) Promotion
c) Pricing d) Advertising
- 6 _____ is the way the public perceives the company and its products.
a) Product b) Image c) Position d) Target

- 7 Product modification can be modified through improving _____
a) Quality b) Features c) Style d) all the above
- 8 Launching a new product at a high price and a high promotional level
is called _____
a) Rapid skimming b) Slow Skimming
c) Mark-up d) value Pricing
- 9 Activities involved in selling goods & services directly to final
consumer is called _____
a) Wholesaling b) Retailing
c) Self-service d) Corporate
- 10 Any form of non-personal presentation and promotion of ideas, goods
or services by an identified sponsor is called _____
a) Public Relation b) Direct Marketing
c) Advertising d) Promotion

Section – B

Answer ALL the questions

(5 x 7 = 35 Marks)

- 11 a) What is the scope of Marketing?
(OR)
b) Discuss the role of Marketing mix elements in marketing a product.
- 12 a) Explain BCG Matrix in assigning resources to SBU.
(OR)
b) Describe the different Demand Estimation Techniques.
- 13 a) Identify the different steps in Market Segmentation.
(OR)
b) What are the four stages of Product Life Cycle?

- 14 a) List down the steps involved in developing a new product.
(OR)
b) Discriminate how characteristics of Services are different from Products.

15 a) Distinguish different types of Retailing.
(OR)
b) Illustrate with appropriate examples the different consumer sales promotion tools available.

Section – C

Answer any THREE questions

(3 x 10 = 30 Marks)

- 16 Illustrate with suitable example the core concepts of Marketing.
 - 17 Interpret the different macro economic variables which constitute the Marketing Environment.
 - 18 Discuss the different bases of Market Segmentation.
 - 19 Interpret the different pricing strategies available for marketers.
 - 20 Analyze the Advertising Process to be followed while creating an advertisement for a product.

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Reg. No. _____

Sub. Code: 21MBAC23

Date: 02.12.2022 A.N.



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SUMMATIVE EXAMINATIONS – NOVEMBER 2022

M.B.A.

Financial Management

Time: 3 Hours

Max. Marks: 75

Section – A

Answer ALL the questions

(10x1= 10 Marks)

Choose the correct answer

- 1 Basic objective of Financial Management is _____.
a) Maximization of profit
b) Maximization of share holder's wealth
c) Ensuring Financial discipline in the firm
d) All of these

- 2 Financial management process deals with _____.
a) Investments b) Financing decisions
c) Both a and b d) None of the above

- 3 _____ includes only the long term sources of fund.
a) Capital Structure b) Financial Structure
c) Capitalization d) Capital

- 4 The cost of equity share or debt is known as _____.
a) The specific cost of capital
b) The related cost of capital
c) The burden on the shareholder
d) None of the above

- 5 A firm's current asset is Rs.14,000 and current liabilities are Rs.6000,
Find the current ratio _____.
a) 1.33:1 b) 2.33:1 c) 1: 2.33 d) 1:1

- 6 Which analysis helps in understanding the real financial position of the concern _____
a) Ration Analysis
b) Trend Analysis
c) Comparative Balance Sheet
d) Cash Flow Statement
- 7 Project cost is Rs. 30,000 and the cash inflows are Rs. 10,000 and the life of the project is 5 years. Calculate the pay-back period
a) 3 Years b) 5 Years c) 1.6 Years d) 2 Years
- 8 Capital Budgeting decisions are of _____
a) Short term nature b) Long term nature
c) both a & b d) none of the above
- 9 The costs associated with the extension of credit and account receivables are identified as follows:
a) Collection Cost b) Capital Cost
c) Administrative Cost d) All the above
- 10 _____ implies extra inventories that can be drawn down when actual lead time and/or usage rates are greater than expected.
a) Reorder level b) Safety stock
c) Lead Time d) Danger Level

Section – B

Answer ALL the questions

(5 x 7 = 35 Marks)

- 11 a) Discuss the Scope Of Financial Management.
(OR)
b) Explain the different functions of Finance.

- 12 a) Explain M & M approach in Capital Structure.
(OR)
b) Discuss the importance of Cost of Capital.
- 13 a) List down the types of Financial statement Analysis.
(OR)
b) Infer how Ratio- Analysis is helpful in financial management.
- 14 a) Identify the risk and uncertainty in Capital Budgeting. Explain it.
(OR)
b) Estimate the need and importance of Capital Budgeting.
- 15 a) Interpret the EOQ model with example.
(OR)
b) Summarise different Cash Management Models.
- Section – C**
- Answer any THREE questions** **(3 x 10 = 30 Marks)**
- 16 Illustrate how Profit Maximisation differs from Wealth Maximisation.
- 17 Enumerate the importance of EBIT and EPS analysis in Leverage.
- 18 Discuss the different techniques of Financial Statement Analysis.
- 19 Analyse any two methods of Capital Budgeting Decisions.
- 20 Evaluate the factors determining working capital requirements.



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SUMMATIVE EXAMINATIONS – NOVEMBER 2022

Time: 3 Hours

Max. Marks: 75

M.B.A.

Operations Management

Answer All the questions

(10x1= 10 Marks)

Choose the correct answer

Section – A

6. Due to small change in customer demands, inventory oscillations become progressively larger looking through the supply chain. This is known as

 - a) Bullwhip effect
 - b) Netchain analysis
 - c) Reverse logistics
 - d) Reverse supply chain

7. The type of inventory method that comprises more number of accounting transactions is known as _____.

 - a) Periodic inventory method
 - b) Perpetual inventory system
 - c) Finished goods inventory method
 - d) Fixed order period inventory system

8. Which among the following is a quantity of a specific item that is ordered from the supplier and issued as a standard quantity to the product process?

 - a) Safety stock
 - b) Lot size
 - c) Standard deviation
 - d) Inventory control

9. What is a critical path?

 - a) It is a path that operates from the starting node to the end node
 - b) It is a mixture of all the paths
 - c) It is the longest path
 - d) It is the shortest path

10. Activity in a network diagram is represented by

 - a) Rectangles
 - b) Arrows
 - c) Squares
 - d) Circles

Section – B

Answer ALL the questions

(5 x 7 = 35 Mark)

11. a) Brief out the types of Forecasting methods in Production
(OR)
b) List out the role of Operations Management in Strategic Management.

12. a) Explain the process of CRP.

(OR)

b) What are the factors determining Plant Location?

13. a) Explain the model of Aggregate Production Planning.

(OR)

b) Explain the Job Shop Production Model.

14. a) State the EOQ Model in Inventory Management.

(OR)

b) Interpret MRP II with its process

15. a) Enumerate the Principles of Materials Management.

(OR)

b) Mention the factors influencing Quality of a product.

Section – C

Answer any THREE questions

(3 x 10 = 30 Marks)

16. Enumerate the types of Productions Systems.

17. Evaluate the various types of Plant Layout.

18. Analyse the Supply chain Management Decision in an organization.

19. Discuss the concept of JIT with its applications.

20. Examine the applications of PERT and CPM.

Reg. No. _____

Sub. Code: 21MBAC26

Date: 09.12.2022 A.N.



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SUMMATIVE EXAMINATIONS – NOVEMBER 2022

**M.B.A.
Business Research Methods**

Time: 3 Hours

Max. Marks: 75

Section – A

Answer ALL the questions

(10x1= 10 Marks)

Choose the correct answer

1. What is the name of the conceptual framework in which the research is carried out?
a) Research hypothesis b) Synopsis of Research
c) Research paradigm d) Research design

2. What is the main role of research in education?
a) To upsurge one's social status
b) To increase one's job prospects
c) To augment one's personal growth
d) To help an applicant in becoming a renowned educationalist

3. A research intends to explore the result of possible factors for the organization of effective mid-day meal interventions. Which research method will be most appropriate for this study?
a) Descriptive survey method b) Historical method
c) Ex-post facto method d) Experimental method

4. What does the longitudinal research approach actually deal with?
a) Long-term research b) Short-term research
c) Horizontal research d) None of the above

5. Which one among the following is the most comprehensive source of population data?
- a) Census
 - b) National Sample Surveys
 - c) Demographic Health Surveys
 - d) National Family Health Surveys
6. A researcher is interested in studying the prospects of a particular political party in an urban area. So, what tool should he prefer for the study?
- a) Rating Scale
 - b) Interview
 - c) Questionnaire
 - d) Schedule
7. The main aim of the scientific method in the research field is to _____
- a) Improve data interpretation
 - b) Confirm triangulation
 - c) Introduce new variables
 - d) Eliminate spurious relations
8. The F-test:
- a) Is essentially a two-tailed test
 - b) Is essentially a one-tailed test
 - c) Can be one-tailed as well as two-tailed depending on the hypotheses
 - d) Can never be one tailed test
9. Which words best describe the writing style that should be used in research reports?
- a) Objective and detached
 - b) Personal and critical
 - c) Emotive and judgemental
 - d) Subjective and detached
10. The abstract of the report:
- a) is usually written before the rest of the report
 - b) provides a snapshot of the major section of the entire report
 - c) serves as the introduction to the report, with a focus on the background for the research
 - d) is usually several pages in length

Section – B**Answer ALL the questions****(5 x 7 = 35 Marks)**

11. a) Explain the importance of Research

(OR)

b) What are the problems encountered by Researchers in India?

12. a) List out the steps involved in Sampling Design.

(OR)

b) Identify the concept of Sample survey and Census survey with illustrations.

13. a) Bring out the types of Questionnaires for data collection.

(OR)

b) Discuss the merits and demerits of personal interview.

14. a) Estimate the characteristics of Hypotheses.

(OR)

b) Elucidate the procedures for Testing Hypotheses.

15. a) Enumerate the Principles of Materials Management.

(OR)

b) Assess the factors influencing Quality of a Product.

Section – C**Answer any THREE questions****(3 x 10 = 30 Marks)**

16. Enumerate the types of Production Systems.

17. Evaluate the various types of Plant Layout.

18. Analyse the Supply Chain Management Decision in an organization.

19. Elaborate the concept of JIT with its applications.

20. Highlight the applications of PERT and CPM.



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SUMMATIVE EXAMINATIONS – NOVEMBER 2022

M.B.A.
Operations Research

Time: 3 Hours

Max. Marks: 75

Section – A

Answer ALL the questions (10x1= 10 Marks)
Choose the correct answer

1. Operations Research approach is
 - a) multi-disciplinary
 - b) scientific
 - c) intuitive
 - d) all of the above

2. A feasible solution to an LP problem
 - a) must satisfy all of the problem's constraints simultaneously
 - b) need not satisfy all of the constraints, only some of them
 - c) must be a corner point of the feasible region
 - d) must optimize the value of the objective function

3. The dual of the primal maximization LP problem having m constraints and n non-negative variables should
 - a) have n constraints and m non-negative variables
 - b) be a minimization LP problem
 - c) both (a) and (b)
 - d) None of the above

4. For any primal problem and its dual,
 - a) optimal value of objective functions is same
 - b) primal will have an optimal solution if and only if dual does too
 - c) both primal and dual cannot be infeasible
 - d) all of the above

5. The method used for solving an assignment problem is called
a) reduced matrix method b) MODI method
c) Hungarian method d) None of the above

6. The dummy source or destination in a transportation problem is added to
a) satisfy rim conditions
b) prevent solution from becoming degenerate
c) ensure that total cost does not exceed a limit
d) None of the above

7. A saddle point exists when
a) maximin value = maximax value b) minimax value = minimum value
c) minimax value = maximin value d) None of the above

8. The size of the payoff matrix of a game can be reduced by using the principle of
a) Game inversion b) Rotation reduction
c) Dominance d) Game transpose

9. The cost of providing service in a queuing system decreases with
a) decreased average waiting time in the queue
b) decreased arrival rate
c) increased arrival rate
d) None of the above

10. In a matrix of transition probability, the probability values should add up to one in each
a) row b) column c) diagonal d) all of the above

Section – B

Answer ALL the questions

(5 x 7 = 35 Marks)

11. a) Mention the formulation of the following linear programming problem
A company has two plants, each of which produces and supplies two products: A and B. The plants can each work up to 16 hours a day. It

plant 1, it takes three hours to prepare and pack 1,000 gallons of A and one hour to prepare and pack one quintal of B. In plant 2, it takes two hours to prepare and pack 1,000 gallons of A and 1.5 hours to prepare and pack a quintal of B. In plant 1, it costs Rs 15,000 to prepare and pack 1,000 gallons of A and Rs 28,000 to prepare and pack a quintal of B, whereas in plant 2 these costs are Rs 18,000 and Rs 26,000, respectively. The company is obliged to produce daily at least 10 thousand gallons of A and 8 quintals of B.

Formulate this problem as an LP model to find out as to how the company should organize its production so that the required amounts of the two products be obtained at the minimum cost.

(OR)

- b) Identify feasible solution for the following linear programming problem using graphical method

$$\text{Maximize } Z = 40x_1 + 80x_2$$

Subject to the constraints

$$2x_1 + 3x_2 \leq 48,$$

$$x_1 \leq 15$$

$$x_2 \leq 10$$

$$x_1, x_2 \geq 0.$$

12. a) Find the dual to the following LP problem.

$$\text{Maximize } Z = x_1 - x_2 + 3x_3$$

Subject to the constraints

$$x_1 + x_2 + x_3 \leq 10$$

$$2x_1 - x_2 - x_3 \leq 2$$

$$2x_1 - 2x_2 - 3x_3 \leq 6$$

$$x_1, x_2, x_3 \geq 0$$

(OR)

- b) Discuss the usefulness of dual simplex method

13. a) Write the Travelling Salesman problem with an example

(OR)

b) Solve the following transportation problem for initial solution us North West corner rule.

| Plant | Distribution Centre | | | | Quantity |
|--------------|---------------------|----|----|----|----------|
| | D1 | D2 | D3 | D4 | |
| P1 | 2 | 3 | 11 | 7 | 10 |
| P2 | 1 | 0 | 6 | 1 | 12 |
| P3 | 5 | 8 | 15 | 9 | 8 |
| Requirements | 10 | 5 | 8 | 7 | |

14. a) Solve the following game

| Union strategies | Company Strategies | | | |
|------------------|--------------------|----|----|----|
| | A | B | C | D |
| I | 20 | 15 | 12 | 35 |
| II | 25 | 14 | 8 | 10 |
| III | 40 | 2 | 10 | 5 |
| IV | -5 | 4 | 11 | 0 |

(OR)

b) Explain the difference between Pure Strategy and Mixed Strategy

15. a) Examine the elements of a Queueing System

(OR)

b) Review the applications of Markov chains in business.

Section – C

Answer any THREE questions

(3 x 10 = 30 M^a)

16. Elucidate the applications of Operations Research.

17. Illustrate how the optimal solution of an Integer Programming problem differs with that of the Linear Programming problem.
18. Solve the following assignment problem. A department of a company has five employees with five jobs to be performed. The time (in hours) that each man takes to perform each job is given in the effectiveness matrix.

| | | Employees | | | | |
|------|---|-----------|----|-----|----|----|
| | | I | II | III | IV | V |
| Jobs | A | 10 | 5 | 13 | 15 | 16 |
| | B | 3 | 9 | 18 | 13 | 6 |
| | C | 10 | 7 | 2 | 2 | 2 |
| | D | 7 | 11 | 9 | 7 | 12 |
| | E | 7 | 9 | 10 | 4 | 12 |

How should the jobs be allocated, one per employee, so as to minimize the total man-hours?

19. Examine the game and find optimal solution

| | | B | | |
|---|-----|----|----|-----|
| | | I | II | III |
| A | I | -2 | 6 | -2 |
| | II | -4 | 5 | 3 |
| | III | 4 | 7 | -2 |

20. The number of customers approaching a tailor appears to be Poission distribution with a mean of 6 customers per hour. The tailor can attend the customers at an average rate of 10 customers per hour with a service time exponentially distributed. Find

- 1) Utilisation parameter / Traffic intensity
- 2) Probability that queueing system is idle
- 3) Average time that the tailor is free on a 10 hour working day
- 4) What is the expected number of customers in the tailor shop?
- 5) What is the expected number of customers waiting for his service?
- 6) How much time should a customer expect to spend in the queue?
