

Registration No.:

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Total Number of Pages: 02

Course: MBA
Sub_Code: MBPC1004

2nd Semester Regular Examination: 2024-25

SUBJECT: CORPORATE FINANCE

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB,LSCM, MBA, MBA(A&M), MM

Time: 3 Hours

Max Marks: 100

Q.Code: S274

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- When and why should you resort to compounding and discounting?
- What are the components for determining interest rate? Why should these be considered?
- What are the key finance functions?
- What are the discounted cash flow methods of project appraisal?
- Is there any project which does not need any investment appraisal method for its evaluation? Name the same and explain why.
- What is retained earnings? How do you compute its cost?
- What is capital structure? What is the need of the same?
- What do you mean by combined leverage? How do you calculate the same?
- What is fixed working capital and how is it different from variable working capital?
- Explain the irrelevant theory of dividend.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- The Finance Manager is guided by a goal while taking financial decisions. What are these two goals? Explain briefly.
- Explain the four important financial decisions a FM is responsible for.
- Discuss important techniques for managing inventory.
- What is the basic purpose of holding inventory? Describe the risk-return trade on associated with inventory management.
- Discuss four factors affecting computation of working capital requirement for a firm.
- Discuss the motives for holding cash by a firm.
- Discuss the challenges for holding inadequate or excessive working capital in a firm.
- The installed capacity of a factory is 600 units. Actual capacity used is 400 units. Selling price is Rs. 10 and Variable cost is Rs. 6 per unit. Calculate the operating leverages, if the fixed costs are; Rs. 400, Rs. 1000 or Rs. 1200.

- i) Explain the working capital operating cycle.
- j) What is optimal cash balance? What are the options for investing surplus cash?
- k) Find the total present value of a deposit of Rs. 10, 000 each paid in years 2, 4, 6, 8, and 10 to the bank assuming a 10% discount rate.
- l) There are two investment projects viz. X and Y. Each needs an initial investment of Rs. 100, 000. The discount rate is 10%. The cash flows in the four years are Rs. 60,000, Rs. 35,000, Rs. 30, 000 and Rs. 15, 000 respectively in Project X. In Project Y, the cash inflow is expected to be equal at the rate of Rs. 35,000 per annum.
Calculate NPV and Profitability index and suggest which project should be accepted.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** Discuss the short term sources of funds for a business firm clearly bringing out the relative merits of each of the sources. **(16)**
- Q4** Among the long term sources of funds such as Equity share, Preference Share, and Bonds and Debentures, which one should you accept to meet your long-term need as a Finance Manager? Justify your answer. **(16)**
- Q5** From the following information, compute market price of the company share as per Walter's Model, if it can earn a return of (i) 20%; (ii) 15% on its investments. **(16)**
Earnings per share = Rs. 10
Dividends payout ratios are = (a) 25%, (b) 50%
The company's capitalization (K_e) = 15%
- Q6** PP Ltd. has the following capital structure **(16)**
- | | |
|--------------------------------------------|----------------------------|
| I. Equity share capital (Rs. 10 par value) | Rs. 200 lakhs |
| II. 14% Pref. share capital (Rs. 100 each) | Rs. 100 lakhs |
| III. Retained Earnings | Rs. 100 lakhs |
| IV. 12% Debentures (Rs.100 each) | Rs. 300 lakhs |
| V. 11% Term loan from ICICI Bank | Rs. 50 lakhs |
| | Total Rs. 750 lakhs |
- a. The market value of Equity share is Rs. 32. The company expects to declare dividend of Rs. 2 per share. There shall be growth rate in the dividend @10% for next 5 years.
 - b. Preference shares are redeemable at a premium of Rs. 5 per share after 8 years and are currently traded at Rs. 84 in the market
 - c. Debenture redemption will take place after 7 years at a premium of Rs. 5 and current market price is Rs. 90. Corporate tax is 40%.
- Calculate the WACC from the above data.

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Course: MBA
Sub_Code: MBPC1005

2nd Semester Regular Examination: 2024-25

SUBJECT: COST AND MANAGEMENT ACCOUNTING

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S300

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions with examples and justifications: (2 x 10)

- a) Fixed cost per unit remains fixed. Justify your answer.
- b) Is Income tax included in the Cost Sheet? Justify your answer.
- c) The terms 'Inventory' and 'Materials' are the same. Justify your answer.
- d) FIFO is suitable at times of rising prices. Justify your answer.
- e) What are the possible effects of labour turnover?
- f) Do you agree that 'variable overheads vary with time'? Justify your answer.
- g) MHR is separately computed for each machine. Justify your answer.
- h) Under absorptions are caused by clerical errors. Do you agree? Justify your answer.
- i) Contract costing and Job Costing are the same. Do you agree? Justify your answer.
- j) Under Service costing 'Depreciation' is always fixed. Do you agree? Justify your answer.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) From the following particulars calculate (i) Contribution (ii) P/V Ratio (iii) Break Even Point in units and in Rupees (iv) What will be the selling price per unit if the Break Even Point is brought down to 25000 units?
Fixed Expenses = Rs. 1,50,000
Variable Cost = Rs. 10 per unit
Selling Price per unit Rs. 15
- b) Distinguish between Standard Costing and Budgetary Control.
- c) Explain the term Variance and distinguish between controllable and uncontrollable variance
- d) Distinguish between Cost control and Cost Reduction.
- e) Explain with examples allocation and apportionment of overhead.
- f) What are the different applications of marginal costing?

- g) From the following information, find the Margin of safety:
Total Fixed cost is Rs. 1,80,000; Total variable cost is Rs. 3,00,000. Selling price per unit is Rs. 6.00 and number of units sold is 2,00,000.
- h) Discuss the classification of costs by variability with examples.
- i) Discuss the various methods of costing bringing out clearly the industries adopting the same.
- j) What do you mean by Overheads? Discuss the different overheads as used in preparation of a cost sheet with example from each category.
- k) Explain what you understand by primary distribution and secondary distribution of overhead with example of such overhead costs.
- l) Explain the reasons for preparing a flexible budget.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** What is CVP analysis? What are the applications of marginal costing techniques in managerial decision making? Explain. (16)
- Q4** Define a Master budget. Discuss the advantages and limitations of budgetary control System. (16)
- Q5** S. Limited furnishes you the following information relating to the half year ending 30th June 2024.
Fixed expenses = Rs. 50,000; Sales value Rs. 2,00,000; Profit Rs. 50,000
During the second half of the same year, the company has projected a loss of Rs. 10,000.
Calculate:
(I) The P/V ratio, break-even point and margin of safety for six months ending 30th June, 2024.
(II) Expected sales volume for second half of the year assuming that selling price and fixed expenses remain unchanged in the second half year also.
(III) The break-even point and margin of safety for the whole year 2024. (16)
- Q6** The standard quantity and standard price of raw material required for 1 unit of product are given below: (16)

Quantity	Standard usage	Price
Material A	2 Kg	Rs 3 per kg
Material B	4 Kg	Rs 2 per kg

Actual output are as follows for 500 units

Quantity	Actual kg used	Total Price
Material A	1100	Rs 3410
Material B	1800	Rs 3960

Compute Material Variances.

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Course: MBA
Sub_Code: MBPC1006

2nd Semester Regular Examination: 2024-25

SUBJECT: Human Resources Management

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S348

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- What is the meaning and process of Human Resource Planning (HRP)?
- Explain the concept of Job analysis and Job specification.
- Discuss the concept of wage differentials and wage law in India.
- What are the different stages of career development?
- Explain the concept of talent management.
- What is the meaning and objective of performance appraisal?
- Describe the different methods of job evaluation.
- What do you mean by Career Planning?
- Write any two differences between on-the-job and off-the-job training.
- Why talent management is required in every organization?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Discuss the evolution of Human Resource Management (HRM) and its role in the organization.
- Explain the process of recruitment, including the meaning, sources, and yield ratio.
- Describe the concept of potential appraisal and the biases in performance appraisal.
- Discuss the concept of compensation, including the types of wages and theories.
- Explain the role and relevance of training in the manufacturing sector company.
- Discuss the concept of promotion, transfer, and separation, and their impact on employee engagement.
- Explain the concept of competency mapping and its importance in talent management.
- Discuss the role of HR in strategic planning and decision-making in an organization.
- Analyze the different tools and techniques for managing human resources in an organization.

- j) Explain the concept of organization citizenship behavior and its impact on HR.
- k) Discuss the process of career planning and the different stages of career development.
- l) Describe the methods of evaluating the effectiveness of training programs.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- | | | |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Q3 | Critically analyze the evolution of HRM and its strategic role in the organization. Discuss the different functions and processes of HRM | (16) |
| Q4 | Explain the concept of performance appraisal in detail, including the meaning, objective, process, and methods. Discuss the different types of compensation and their impact on employee motivation. | (16) |
| Q5 | Discuss the concept of career development and the different stages of career planning. Analyze the role of HR in training and development, including the on-the-job and off-the-job training methods. | (16) |
| Q6 | Integrate the knowledge of HR concepts to plan and design human resource intervention and strategies for an organization. Discuss the challenges and best practices in managing human resources in an organizational context. | (16) |

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Course: MBA
Sub_Code: MBQT1002

2nd Semester Regular Examination: 2024-25

SUBJECT: Business Research

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S578

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2 x 10)

- a) What is the significance of research in business decision-making?
- b) Define the term 'hypothesis' in the context of research methodology.
- c) List two types of research designs.
- d) What is the purpose of a questionnaire in research?
- e) Explain the concept of primary data.
- f) What is the role of ethical conduct in research?
- g) Describe the Z-test and its application.
- h) What is the difference between parametric and non-parametric tests?
- i) Define 'sampling fundamentals' in research.
- j) What is the importance of scaling techniques in measurement?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- a) Discuss the various types of research and their importance in business.
- b) Explain the research process and its key components.
- c) How do you identify a research problem? Provide examples.
- d) Describe the steps involved in formulating a hypothesis.
- e) Compare and contrast one-way and two-way ANOVA.
- f) Explain the significance of factor analysis in data analysis.
- g) Discuss the role of SPSS in business research.
- h) What are the different types of research reports? Explain their significance.
- i) Describe the process of data processing in research.
- j) Explain the concept of multiple regression analysis and its applications.
- k) Discuss the importance of report writing in research.
- l) How can descriptive statistics be used in business decision-making?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** Critically analyze the importance of scientific research in business decision-making and its impact on organizational success. **(16)**
- Q4** Discuss the various hypothesis testing methods and their applications in business research, providing examples for each. **(16)**
- Q5** Evaluate the role of econometrics in business research and decision-making, highlighting its tools and techniques. **(16)**
- Q6** Provide a comprehensive overview of the research report structure and the significance of each section in conveying research findings. **(16)**

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Course: MBA
Sub_Code: MBPC1007

2nd Semester Regular Examination: 2024-25

SUBJECT: Operations Management

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S400

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- a) Define Operations Management.
- b) What are the key responsibilities of an operations manager?
- c) Define work measurement.
- d) What are the differences between single-facility and multi-facility location techniques?
- e) What is line balancing?
- f) What does MRP stand for?
- g) What is the purpose of quality management?
- h) Name any two types of control charts.
- i) Define TQM (Total Quality Management).
- j) What is the significance of ISO 22000?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Differentiate between manufacturing and service operations.
- b) Explain process analysis and its significance in operations management.
- c) What is work measurement? Discuss time study in this context.
- d) Differentiate between long-term, medium-term, and short-term capacity planning with example.
- e) Explain the key factors influencing facility location decisions.
- f) Explain line balancing and its importance in production systems.
- g) Explain the objectives and functions of inventory control.
- h) What is MRP (Materials Requirements Planning)? Explain its components.
- i) Discuss the key principles of Total Quality Management (TQM).
- j) Explain the steps involved in developing a PERT network diagram.

- k) Consider the following two machines and six jobs flow shop scheduling problem. Using the Johnson's algorithm, find the optimal sequence that will minimize the makespan.

Job(i)	Machine-1	Machine-2
1	5	4
2	2	3
3	13	14
4	10	1
5	8	9
6	12	11

- l) What is ISO 9000? Explain its relevance to quality assurance.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** What is aggregate planning? Explain in details its importance, cost factors, and strategies. (16)
- Q4** Discuss the factors influencing the facility layout. Discuss in details the different types of facility layout. (16)
- Q5** Describe the role of control charts in quality management. The following data were obtained over five-day period to indicate \bar{x} and R control chart for the quality characteristic of certain manufacturing product. There is a single machine with single operator. The sample size is five and two samples are taken per day. Draw the \bar{x} and R chart and comment on the process. (16)

Sample Number	Observations				
	1	2	3	4	5
1	10	12	13	8	9
2	7	10	8	11	9
3	11	12	9	12	10
4	10	9	8	13	11
5	8	11	11	7	7
6	11	8	8	11	10
7	10	12	13	13	9
8	10	12	12	10	12
9	12	13	11	12	10
10	10	13	7	9	12

- Q6** Write short notes on the following (8 + 8)
- (i) ISO14000 (EMS)
 - (ii) Economic order quantity (EOQ)

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Course: MBA
Sub_Code: MBPC1008

2nd Semester Regular Examination: 2024-25

SUBJECT: Business Analytics

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S426

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2 x 10)

- What is descriptive analytics and why it is required?
- Define Big data analytics. Name two technologies commonly used for Big data analytics.
- What are the advantages and disadvantages of using artificial intelligence?
- What is Prescriptive Analytics and how is it different from Predictive Analytics?
- What are the advantages and challenges of using Big data?
- How does Business Analytics improve customer experience?
- What is the purpose of the plot () function in R, and how can it be used to create a simple line graph?
- Define Customer Segmentation and its importance in personalized marketing.
- Explain Churn Analysis and its importance in retaining customers.
- What is the significance of real time analytics in marketing?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- What do you understand by data cleaning? How poor data quality can impact business decision making.
- Calculate the mean, median, and mode for the following dataset of monthly sales (in ₹1000s): [12, 15, 18, 22, 15, 20, 15, 10, 16, 20]
- How can organizations shift from a traditional business model to a Data Driven Business Model?
- How does the consumer behaviour help you in planning for marketing analytics for a business?
- What is meant by time series? Differentiate between auto correlation and auto regression.
- List and explain three key benefits organisations can gain from adopting Big data analytics.
- Explain the role of Supply Chain Analytics in optimizing logistics and inventory management.
- Describe the RFM (Recency, Frequency, and Monetary) model for customer segmentation.

- i) Briefly describe the lifecycle of Business Analytics projects, from problem identification to implementation.
- j) How Customer Segmentation is applied in the financial services industry? What do you mean by life stage segmentation?
- k) Discuss the role of R programming in data exploration and analysis. Give an example.
- l) What is the significance of Artificial Intelligence in Business analytics? Mention one real world example of AI implementation in business analytics.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

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|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Q3 | An E commerce company wants to improve customer retention by leveraging analytics. <ul style="list-style-type: none"> i. How can Descriptive Analytics help the company understand past customer behaviors? ii. How can Predictive Analytics be used to forecast customer churn? iii. What Prescriptive Analytics strategies can the company implement to reduce churn and increase engagement? | (16) |
| Q4 | What is Data Warehousing, and how does it support Business Analytics? Explain with an example. Compare traditional Data Warehouses with modern cloud-based Data Lakes. | (16) |
| Q5 | Mention the significance of regression analysis for financial analyst. NPV and IRR are the techniques to evaluate the projects. As a financial analyst what is your choice between NPV and IRR and why? | (16) |
| Q6 | Discuss the ethical considerations in business analytics, focusing on privacy, fairness, and accountability. How does it help in building a sustainable analytics strategy? | (16) |

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Total Number of Pages: 02

Course: MBA
Sub_Code: MBPC1009

2nd Semester Regular Examination: 2024-25

SUBJECT: Management Information System

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S480

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- What are the three levels of information based on purpose?
- Distinguish between data and information. List any two qualities of a good information.
- Differentiate between MIS and DSS.
- Define "data mart" with an example.
- What do you mean by Learning Management System? What is meant by user tracking in LMS?
- What is business intelligence and how does it support decision making in organisations?
- Compare and contrast virtual reality and augmented reality with examples.
- Define cloud computing and mention one of its service models.
- What are the objectives of ERP?
- Give two example of B2C E-commerce application.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- What is Information system? What are the major components of an Information system?
- What is the role of DBMS in a decision support system?
- What is DSS in the context of MIS? What are the components of DSS?
- Describe the key stages in the Business Intelligence process.
- Explain how the balance score card can be used as an IT strategy tool in organisations.
- Mention any three applications of data warehouses in real-world sectors.
- Briefly explain the role of AI in enhancing efficiency and innovation in Modern business.
- What is Data migration in ERP? What are mainly the customer expectations from ERP packages?
- Critically evaluate the role of data warehousing in enhancing organisational decision-making.
- What are the components of the supply chain management (SCM) what has been the impact of E-commerce on the SCM components?

- k) Briefly describe the challenges of managing MIS.
l) Information Security is not simply a technology issue, it is a business issue. Discuss.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** What are the characteristics of MIS? Explain relevance of MIS to the organisations. How information systems support strategies at different levels? **(16)**
- Q4** The CRM should not be viewed only from the marketing prospective; rather it combines the entire cross-functional information in an organisation, which helps to create strong customer relations." Comment on this statement. **(16)**
- Q5** Critically analyse the role of ERP systems in improving organizational efficiency and integration. Discuss the strategic impact it has on business process and decision-making. **(16)**
- Q6** Discuss in detail the strategic role of a Learning Management System (LMS) in modern education and training. Include its features, types of learning supported, and overall benefits. **(16)**

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Course: MBA
Sub_Code: MBPC1010

2nd Semester Regular Examination: 2024-25

SUBJECT: STRATEGIC MANAGEMENT

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S521

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- What is the full form of SMART?
- What is balanced score card?
- What do you mean by synergy?
- What is organizational diagnosis?
- Why do companies create SBUs?
- What is the cost of leadership?
- What is core competency?
- What is value chain analysis?
- Who developed the five forces model?
- What is the difference between strategy and tactics?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Explain the process of strategy formulation.
- Explain six differences between mergers and acquisitions.
- Why is it important for a firm to study the external environment?
- What are the various elements of strategic management processes? Explain in detail.
- Why do the value chain activities of rival companies often differ?
- How a company's culture can promote better strategy executions.
- Mention six differences between strategic objectives and financial objectives.
- 'Business strategies are partly proactive and partly reactive'. Explain.
- Why do business firms need to make SWOT analysis?
- Discuss the interrelationship that exists between the formulation and implementation of strategies. Provide examples of such an interrelationship.
- List down on the managerial process of crafting and executing strategy.
- 'Strategic leadership- a dynamic balancing act'. Explain.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** Describe 7'S Framework of McKinsey and Company. Explain its relevance in Indian corporate sectors. **(16)**
- Q4** Discuss the various factors which should be considered by a firm for choosing a strategy in a declining industry. **(16)**
- Q5** What do you understand by contingency strategies? Discuss the conditions which call for pursuing these strategies. **(16)**
- Q6** What is a competitive advantage? Discuss its building blocks? How long will a competitive advantage last? What are the various factors affecting the durability of competitive advantages? **(16)**

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Course: MBA
Sub Code: MBPC1011

2nd Semester Regular Examination: 2024-25

SUBJECT: Introduction to AI

BRANCH(S): BA, FM, FM&HRM, GM, HCHM, HRM, IB, LSCM, MBA, MBA (A & M), MM, RM

Time: 3 Hours

Max Marks: 100

Q.Code: S554

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- Differentiate between general artificial intelligence and super artificial intelligence.
- Explain reactive machines in artificial intelligence.
- What are the common steps in an AI project workflow?
- What is Density-Based Clustering?
- What is association in machine learning?
- Define the term "AI project pipeline" and list its main components.
- What is model overfitting, and how can it be avoided?
- Explain why data quality is critical for building AI systems.
- What are some challenges companies face when trying to scale AI across multiple departments?
- Explain any three adverse uses of AI in society.

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Differentiate Between Machine Learning and Deep Learning.
- What are the Applications of Supervised Machine Learning in Modern Businesses?
- Write a short note on the self-driving car case study.
- Mention unsupervised learning and explain various type of unsupervised learning.
- Explain the steps involved in building an AI project from problem definition to deployment.
- How can you evaluate the performance of a classification model? Mention at least three metrics.
- Discuss the significance of data labeling and annotation in AI projects.
- What are the key considerations when selecting a machine learning algorithm for an AI project?
- Discuss the strategic advantages of integrating AI into a company's operations. Include examples of real-world applications.

- j) What regulatory frameworks should govern the use of AI in public and private sectors?
- k) What impact is AI likely to have on employment in the next decade? Which sectors are most at risk and why?
- l) Explain the role of cross-functional teams in successful AI projects. How can companies ensure effective collaboration?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

(16 x 2)

- Q3** a) Write down the difference between Bagging and Boosting. (8 x 2)
b) Explain K-means clustering algorithm.
- Q4** Compare and contrast cloud-based vs. on-premise deployment of AI models in terms of scalability, cost, and data security. (16)
- Q5** Analyze the benefits and risks of AI adoption in education, healthcare, and agriculture in developing countries. Describe the steps you would take to evaluate, plan, and implement this initiative, considering both technical and organizational factors. (16)
- Q6** Discuss the challenges in designing fair and unbiased algorithms. How can these be reduced? (16)