

SEMESTER 3

BBA (HONS.)

SEMESTER 3

INTRODUCTION TO QUANTITATIVE TECHNIQUES

Course Code	BBPCT301	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PCC

Course Objectives:

1. To familiarise student with the use quantitative techniques in managerial decision making.
2. Analyse the impact of inflation on price changes and cost of living.
3. The emphasis is on understanding the concepts, formulation and interpretation.
4. Help the students in understanding the various test of hypothesis and their importance

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Quantitative approach to decision-making—introduction—meaning and definition— classification of Quantitative Techniques- Mathematical Quantitative Technique, Statistical Quantitative Technique and programming Quantitative Technique (theory Only) Quantitative Techniques and other disciplines—application of QT in business Decisions — limitations	11
2	Meaning, Uses, Characteristics, Importance and Types of Index Numbers-Uses of Index Number in Business- limitations,-methods of Calculation of Index Numbers- Test of Index numbers.	11

3	Theoretical distribution—binomial distribution—basic assumptions and characteristics—fitting of binomial distribution—Poisson distribution—characteristics—fitting of Poisson distribution—Normal distribution—features and properties—standard normal curve.	11
4	Statistical inference—testing of hypothesis—procedure—error in testing—two tail test and one tail test—non parametric tests—Chi-Square test, Wilcoxon test. Parametric tests—Z test—test of significance of large samples—test for two sample means—small sample mean tests—Student t test—Analysis of variance—F test—one-way ANOVA and two-way ANOVA tests.	11

Course Assessment Method

(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
· 2 Questions from each module. · Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	· Each question carries 9 marks. · Two questions will be given from each module, out of which 1 question should be answered. · Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

	Course Outcomes	Bloom's Knowledge Level (KL)
CO1	Understand how the Quantitative Techniques can be applied to solve business , representation and role of Various mathematical techniques and their applications in effective decision-making process.	K2
CO2	Track and compare changes in key economic variables over time, allowing businesses to analyse trends, forecast future performance, and make informed decisions regarding pricing, production, investment, and overall strategy, particularly when dealing with factors like inflation, cost of living, and market fluctuations.	K3
CO3	Provide a mathematical model to understand and predict the likelihood of various outcomes, enabling informed decision-making by allowing businesses to assess risks, analyse market trends, and forecast future performance based on historical data, particularly when dealing with uncertain situations like sales volumes, customer behaviour, or investment returns	K4
CO4	Make decisions about the parameters of a population, based on random sampling. It helps us to make inference about the data by supplication of various test of hypothesis like T test ,F test, Chi Square test and ANOVA	K4

Reference Book				
Sl.No	Name of Book	Author	Publisher house	Edition and year
1	Quantitative techniques and Operations Research	Gupta S P and Gupta P K	Sulthan Chand	First ed. 2014
2	Quantitative Techniques in Management	Vohra ND	McGraw Hills	5 th ed. 2017

MODEL QUESTION PAPER

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBPCT301

Course Name: Introduction to Quantitative Techniques

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

1. What is the scope of Quantitative techniques? CO1 (3)
2. Describe various methods of classifying Quantitative Techniques? CO1 (3)
3. What is meant by index numbers? CO2 (3)
4. How does the price index number differ from the cost of living index number? CO2 (3)
5. Discuss the usefulness of normal distribution? CO3 (3)
6. What are the situations in which binomial distribution can be applied? CO3 (3)
7. Differentiate between one tail test and two tailed tests? CO4 (3)
8. Explain the various applications of Student t –distribution? CO4 (3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9. a) Briefly explain the business applications of Quantitative techniques? List out limitations of Quantitative Technique? CO1 (9)

OR

10. Briefly explain the following: CO1

- a) Mathematical Quantitative Technique (3)
- b) Statistical Quantitative Technique (3)
- c) programming Quantitative Technique (3)

Module 2

11. The following table gives the price and quantities of commodities in the city Calcutta. Compute price index for 1984 with 1979 as base year using Fishers formula CO2

Commodity	1979 Price (Rs)	1979 Quantity	1984 Price(Rs)	1984 Quantity
Rice	8	4	10	8
Wheat	25	2	29	3
Ghee	5	5	7	6
Sugar	2	3	4	7

(9)

OR

12. Define index number. State the two types of price index numbers. CO2 (9)

Module 3

13. Explain the different types of probability distributions? CO3 (9)

OR

14. The variable x follows a normal distribution with mean 45 and S. D=10. Find the probability that

- a) x is greater than 60 (3)
- b) x lies between 40 and 56 (3)
- c) x is less than 30 (3)

CO3

Module 4

15 Explain Testing of hypothesis with its detailed steps in hypothesis testing? CO4 (9)

OR

16. Following is the number of computers sold by 4 salesmen during the year, three months from January to March

Month	Salesman			
	A	B	C	D
January	50	40	48	39
February	46	48	50	45
March	39	44	40	39

Is there a significant difference in the sales made by four salesmen CO4 (9)

SEMESTER 3
LAW FOR BUSINESS

Course Code	BBPCT302	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PCC

Course Objectives:

1. To develop an understanding of the legal framework applicable to businesses.
2. To enhance knowledge of business laws necessary for making informed decisions in a professional environment.
3. To analyze the implications of legal regulations on business operations and management.
4. To prepare students to identify and manage legal risks in business.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Definition, Scope, and Importance of Business Law. Overview of Indian Legal System. Introduction to the Constitution of India: Fundamental Rights and Directive Principles. Judicial and Quasi-Judicial Bodies related to Business Laws.	11
2	Essentials of a Valid Contract (Indian Contract Act, 1872). Types of Contracts: Valid, Void, Voidable, and Quasi-Contracts. Offer, Acceptance, Consideration, and Competency of Parties. Breach of Contract and Remedies for Breach.	11

3	Corporate and Partnership Laws, Companies Act, 2013: Incorporation, Memorandum, Articles of Association. Duties and Responsibilities of Directors and Officers. Limited Liability Partnership (LLP) Act, 2008: Features and Registration Process. Rights, Duties, and Liabilities of Partners.	11
4	Consumer Protection and Regulatory Framework Consumer Protection Act, 2019: Rights of Consumers, Consumer Redressal Mechanism. Competition Act, 2002: Anti-Competitive Agreements, Abuse of Dominant Position. Intellectual Property Rights (IPR): Patents, Copyrights, and Trademarks. Cyber Laws and E-Commerce: Overview of Information Technology Act, 2000.	11

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the key provisions of various business laws and their applications.	K2
CO2	Apply legal principles in business decision-making processes.	K3
CO3	Analyse and interpret legal documents such as contracts, agreements, and partnership deeds.	K4
CO4	Analyze and assess legal risks associated with business operations, evaluating their potential impact and proposing strategies for risk mitigation and compliance.	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Business Law	N.D.Kapoor	Sultan chand&sons	36 th edition ,2020
2	Legal Aspects of Business	Akhileshwar Pathak	Mc Graw Hill education	8 th Edition,2018
3	Business Law	L.R.potti	Yamuna publications	2008

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Business Law for Management	K.R. Bulchandani,	Himalaya Publishing House.	8th Edition, 2021,
2	Mercantile Law	M.C. Kuchhal	Vikas Publishing House.	8th Edition, 2019,
3	Principles of Business Law	Ashok Sharma	Taxmann Publications.	4th Edition, 2020
4	Indian Contract Act and Specific Relief Act	Avtar Singh	Eastern Book Company.	12th Edition, 2020,

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBPCT302
Course Name: LAW FOR BUSINESS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Define Business Law?	CO1	(3)
2	What are Fundamental Rights as per the Constitution of India?	CO1	(3)
3	What is a Quasi-Contract?	CO2	(3)
4	State any two essentials of a valid contract under the Indian Contract Act, 1872.	CO2	(3)
5	What is the Memorandum of Association (MoA)?	CO3	(3)
6	What is meant by a Limited Liability Partnership (LLP)?	CO3	(3)
7	Name any two rights of consumers under the Consumer Protection Act, 2019.	CO4	(3)
8	What is Intellectual Property Rights (IPR)?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain the scope and importance of Business Law in detail.	CO1	(9)
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OR

10	Discuss the role and relevance of judicial and quasi-judicial bodies in Business Law.	CO1	(9)
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Module 2

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| 11 | Explain the essential elements of a valid contract under the Indian Contract Act, 1872. | CO2 | (9) |
| 12 | Discuss the types of contracts with suitable examples. | CO2 | (9) |

Module 3

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| 13 | Explain the process of incorporation of a company under the Companies Act, 2013. | CO3 | (9) |
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OR

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| 14 | Discuss the features, rights, and liabilities of partners in a Limited Liability Partnership (LLP). | CO3 | (9) |
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Module 4

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| 15 | Elaborate on the rights of consumers and the grievance redressal mechanism under the Consumer Protection Act, 2019. | CO4 | (9) |
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OR

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| 16 | Explain the key provisions of the Information Technology Act, 2000, concerning cyber laws and e-commerce. | CO4 | (9) |
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SEMESTER 3

INTRODUCTION TO MARKETING MANAGEMENT

Course Code	BBPCT303	CIE Marks	40
Teaching Hours/Week (L: T: P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PCC

Course objective:

1. To understand the nature and significance of the Marketing Function and the Marketing management process.
2. To gain knowledge about the key aspects of the Buying Behaviour of consumers and develop an understanding of the STP Process.
3. To explain the factors affecting various product, pricing, channel management, and Marketing communication decisions.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	INTRODUCTION Nature, Scope and Importance of Marketing – Functions – Evolution of Marketing – Holistic Marketing – Extended Marketing Mix - Marketing Environment- Factors Influencing Marketing Environment – Market Segmentation – Need and basis of Market Segmentation Targeting and Positioning - Consumer Buying Behaviour – Factors affecting Buyer Behaviour -Buying Motives - Buyer Roles - Consumer Buying Decision Process: The 5 Stage Model. Organizational Buying Decisions	14
2	PRODUCT Product –Definition – Levels of Product - Classification of Products – Product Mix: Levels, Hierarchy, Classifications, Mix. Product Lifecycle:	10

	The Concept and Its Strategic Implications, Significance of Branding, New Product Development Process.	
3	PRICING AND PHYSICAL DISTRIBUTION Price – Pricing Objectives – Pricing Policies – Methods of Pricing – Distribution Channel (Levels, Advantages and Disadvantages) – Factors to be considered in Selecting a Channel – Channel Conflicts (Causes and Overcoming Conflicts).	10
4	PROMOTION Eight Elements of the Promotion Mix: Basics of Advertising (5M's), Sales Promotion, Events & Experiences, Public Relations & Publicity, Direct Marketing, Interactive Marketing, Word of Mouth Marketing, Social Media Marketing, and Personal Selling. Factors Affecting the Promotion Mix.	10

Course Assessment Method

(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered, and in Part B, each student can choose any one full question out of the two questions.

Part A	Part B	Total
2 Questions from each module. Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	Each question carries 9 marks. Two questions will be given from each module, out of which 1 question should be answered. Each question can have a maximum of 3 subdivisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, students should be able to:

Course Outcomes (COs)		Bloom's Knowledge Level (KL)
CO1	Explain the fundamental concepts, scope, and evolution of marketing, including market segmentation and consumer behaviour models.	K2
CO2	Analyse different product types, branding strategies, and the product life cycle to design effective product mixes.	K4
CO3	Assess pricing methods and distribution channels to recommend strategies for efficient market delivery	K4
CO4	Examine a promotional strategy by integrating various elements of the promotion mix to influence customer engagement.	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text books				
Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1.	Marketing Management	Philip Kotler, Kevin Lane Keller, Alexander Chernev	Pearson	17 ed. 2024
2.	Marketing Management: Indian Context, Global Perspective	V. S. Ramaswamy & S. Namakumari	SAGE Publications Pvt. Ltd	6 ed. 2018

Reference books				
Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1.	Marketing Management – A South Asian Perspective	Philip Kotler, Kevin Lane Keller, Abraham Koshy & Mithileshwar Jha	Pearson	14 ed. 2018
2.	Marketing Management-Text, Cases and Applications	KS Chandrasekar	Vijay Nicole	2 ed. 2019

Video Links (NPTEL, SWAYAM...)	
1.	https://onlinecourses.nptel.ac.in/noc22_mg57/preview
2.	https://onlinecourses.nptel.ac.in/noc25_mg68/preview

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBPCT303

Course Name: INTRODUCTION TO MARKETING MANAGEMENT

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Explain the importance of Marketing	CO1	(3)
2	What do you mean by Holistic Marketing?	CO1	(3)
3	Illustrate the concept of Branding with an example.	CO2	(3)
4	What are the different classifications of products	CO2	(3)
5	Explain the concept of psychological pricing with an example.	CO3	(3)
6	What do you mean by a distribution channel?	CO3	(3)
7	Write a short note on Sales Promotion Strategies.	CO4	(3)
8	List down the importance of social media marketing.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain in detail the Evolution of Marketing.	CO1	(9)
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OR

10	Elucidate in detail about the Consumer Buying Process.	CO1	(9)
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Module 2

11	Briefly explain the concept of Product Life Cycle with an example.	CO2	(9)
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OR

12	Write a detailed analysis of the significance of Branding.	CO2	(9)
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Module 3

13 Describe in detail about different pricing strategies. CO3 (9)

OR

14 List out the factors to be considered in selecting a Channel CO3 (9)

Module 4

15 Briefly explain in detail about the eight elements of the promotion mix. CO4 (9)

OR

16 Elucidate in detail about factors affecting the Promotion Mix. CO4 (9)

SEMESTER 3

LIFE SKILLS

Course Code	BBSET304	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	2:0:2:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	SEC

Course Objectives:

1. Enable students to understand themselves better by fostering self-awareness, self-reflection, and personal development rooted in core values and principles.
2. Equip students with the ability to build meaningful relationships, work collaboratively, and communicate effectively in diverse personal and professional contexts.
3. Encourage students to think both abstractly and concretely, enabling them to analyze situations, make informed decisions, and adapt resourcefully to life's challenges.
4. Prepare students to lead with integrity, initiate positive change, and apply essential life and professional skills that enhance their career readiness and success.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Overview of Life Skills: Meaning and significance of life skills, Life skills identified by WHO: Self-awareness, Empathy, Critical thinking, Creative thinking, Decision making, problem solving, Effective communication, interpersonal relationship, coping with stress, coping with emotion. Life skills for professionals: positive thinking, right attitude, attention to detail, having the big picture, learning skills, research skills, perseverance, setting goals and achieving them, helping others, leadership, motivation, self-motivation, and motivating others, personality development, IQ, EQ, and SQ	8

2	Self-awareness: definition, need for self-awareness; Coping With Stress and Emotions, Human Values, tools and techniques of SA: questionnaires, journaling, reflective questions, meditation, mindfulness, psychometric tests, feedback. Stress Management: Stress, reasons and effects, identifying stress, stress diaries, the four A's of stress management, techniques, Approaches: action-oriented, emotion-oriented, acceptanceoriented, resilience, Gratitude Training, Coping with emotions: Identifying and managing emotions, harmful ways of dealing with emotions, PATH method and relaxation techniques. Morals, Values and Ethics: Integrity, Civic Virtue, Respect for Others, Living Peacefully. Caring, Sharing, Honesty, Courage, Valuing Time, Time management, Co operation, Commitment, Empathy, Self-Confidence, Character, Spirituality, Avoiding Procrastination, Sense of Engineering Ethics.	4
3	21st century skills: Creativity, Critical Thinking, Collaboration, Problem Solving, Decision Making, Need for Creativity in the 21st century, Imagination, Intuition, Experience, Sources of Creativity, Lateral Thinking, Myths of creativity, Critical thinking Vs Creative thinking, Functions of Left Brain & Right brain, Convergent & Divergent Thinking, Critical reading & Multiple Intelligence. Steps in problem solving: Problem Solving Techniques, Six Thinking Hats, Mind Mapping, Forced Connections. Analytical Thinking, Numeric, symbolic, and graphic reasoning. Scientific temperament and Logical thinking.	8
4	Group and Team Dynamics: Introduction to Groups: Composition, formation, Cycle, thinking, Clarifying expectations, Problem Solving, Consensus, Dynamics techniques, Group vs Team, Team Dynamics, Virtual Teams. Managing team performance and managing conflicts, Intrapreneurship. Leadership: Leadership framework, entrepreneurial and moral leadership, vision, cultural dimensions. Growing as a leader, turnaround leadership, managing diverse stakeholders, crisis management. Types of Leadership,	4

	Traits, Styles, VUCA Leadership, Levels of Leadership, Transactional vs Transformational Leaders, Leadership Grid, Effective Leaders.	
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Lab Activities (20 hours min)

Verbal

Effective communication and Presentation skills. Different kinds of communication; Flow of communication; Communication networks, Types of barriers; Miscommunication

Introduction to presentations and group discussions.

Learning styles: visual, aural, verbal, kinesthetic, logical, social, solitary; Previewing, KWL table, active listening, REAP method

Note-taking skills: outlining, non-linear note-taking methods, Cornell notes, three column note taking.

Memory techniques: mnemonics, association, flashcards, keywords, outlines, spider diagrams and mind maps, spaced repetition.

Time management: auditing, identifying time wasters, managing distractions, calendars and checklists; Prioritizing – Goal setting, SMART goals; Productivity tools and apps, Pomodoro technique.

Non Verbal

Non-verbal Communication and Body Language: Forms of non-verbal communication; Interpreting body-language cues; Kinesics; Proxemics; Chronemics; Effective use of body language, Communication in a multi cultural environment.

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

Sample Assessment Methods for Lab exam

Group Discussion

Create groups of about 6 students each and engage them on a GD on a suitable topic for about 20 minutes.

Parameters to be used for evaluation are as follows:

- Communication Skills
- Subject Clarity
- Group Dynamics
- Behaviours & Mannerisms

Presentation Skills

Identify a suitable topic and ask the students to prepare a presentation (preferably a power point presentation) for about 10 minutes.

Parameters to be used for evaluation are as follows:

- Communication Skills
- Platform Skills
- Subject Clarity/Knowledge

Case Study

The students will be given a case study with questions at the end. The students have to analyze the case and answer the question at the end.

Parameters to be used for evaluation are as follows:

- (i) Analyze the case situation
- (ii) Key players/characters of the case
- (iii) Identification of the problem (both major & minor if exists)
- (iv) Bring out alternatives
- (v) Analyze each alternative against the problem
- (vi) Choose the best alternative
- (vii) Implement as solution
- (viii) Conclusion
- (ix) Answer the question at the end of the case

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome	Bloom's Knowledge Level (KL)
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CO1	Identify different life skills required in personal and professional life and apply well-defined techniques to cope with emotions and stress.	K3
CO2	Explain the basic mechanics of effective communication and demonstrate these through presentations.	K3
CO3	Use appropriate thinking and problem solving techniques to solve new problems	K3
CO4	Understand the basics of teamwork and leadership	K2

Textbooks			
Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Life Skills for Engineers	ICT Academy of Kerala,	McGraw Hill Education (India) Private Ltd	2017
Soft Skill for Managers	Kalyana	Wiley Publishing Ltd	I st Ed. 2015
Life Skills for Engineers	Remesh S., Vishnu R.G	Ridhima Publications	I st Ed. 2016

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Soft Skills for Everyone	Butterfield Jeff	Cengage Learning India Pvt Ltd.	I st Ed. 2011
2	The Ace of Soft Skills: Attitude, Communication and Etiquette for Success	Ramesh, Gopalaswamy	Pearson Education	I st Ed. 2013
3	Development of Life Skills and Professional Practice	Shalini Verma	Sultan Chand (G/L) & Company,	I st Ed. 2014

4	Training in Interpersonal Skills: Tips for Managing People at Work.	Stephen Robbins	Pearson Education, India	6 th Ed. 2016
5	Personality Development & Soft Skills	Barun K. Mitra.	Oxford Publishers	3 rd Ed. 2017
6	The First Book of Life Skills	Larry James	Embassy Books	I st Ed. 2016

Note:
K1-

Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBSET304
Course Name: LIFE SKILLS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	Explain the significance of life skills identified by WHO in personal and professional development.	CO1	(3)
2	What do you mean by effective communication?	CO1	(3)
3	Describe an action-oriented approach to stress management and provide examples of such techniques.	CO2	(3)
4	Explain the relationship between critical thinking and creative thinking in problem-solving processes.	CO2	(3)
5	Outline the characteristics of effective leadership and the importance of each trait for successful leadership.	CO3	(3)
6	How does empathy contribute to building strong interpersonal relationships in both personal and professional settings?	CO3	(3)
7	Illustrate the concept of lateral thinking with an example of its application in problem-solving situations.	CO4	(3)
8	Discuss the difference between intrapreneurship and entrepreneurship with examples highlighting their distinctive features.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain the significance of self-awareness in the context of life skills according to WHO	CO1	(9)
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OR

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| 10 | Discuss the importance of coping with stress and emotions as part of life skills for professionals. | CO1 | (9) |
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Module 2

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| 11 | How can the four A's of stress management techniques help individuals in dealing with stress effectively? | CO2 | (9) |
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OR

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|----|--|-----|-----|
| 12 | What is the PATH method? Describe a situation where this method can be used effectively. | CO2 | (9) |
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Module 3

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| 13 | Differentiate between critical thinking and creative thinking, and discuss the functions of the left brain and right brain in these processes. | CO3 | (9) |
|----|--|-----|-----|

OR

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|----|---|-----|-----|
| 14 | Explain the steps involved in problem-solving, outlining various problem-solving techniques such as mind mapping and six thinking hats. | CO3 | (9) |
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Module 4

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|----|--|-----|-----|
| 15 | Discuss the dynamics of group and team interactions, emphasizing the difference between groups and teams, and the importance of managing conflicts in team dynamics. | CO4 | (9) |
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OR

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|----|---|-----|-----|
| 16 | Identify the type of group formed / constituted in each of the given situations and explain each. | CO4 | (9) |
| | a) A Police Inspector with subordinates reporting to him | | |
| | b) An enquiry committee constituted to investigate a specific incident | | |
| | c) A group of book lovers who meet to talk about reading | | |

SEMESTER 3
HEALTH AND WELLNESS

Course Code	BBVAT305	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	2:0:1:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs 30 Min
Prerequisites (if any)	None	Course Type	VAC

Course Objectives:

1. To provide essential knowledge on physical activity, health, and wellness.
2. To ensure students understand body systems, exercise principles, nutrition, mental health, and disease management.
3. To educate students on the benefits of yoga, the risks of substance abuse and basic first aid skills.
4. To equip students with the ability to lead healthier lifestyles.
5. To enable students to design effective and personalized exercise programs.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Human Body Systems related to Physical activity and its functions: Respiratory System - Cardiovascular System. Musculoskeletal System and the Major Muscle groups of the Human Body. Quantifying Physical Activity Energy Expenditure and Metabolic equivalent of task (MET) Exercise Continuum: Light-intensity physical activity, Moderate - intensity physical activity, Vigorous -intensity physical activity. Defining Physical Activity, Aerobic Physical Activity, Anaerobic Physical Activity, Exercise and Health-Related Physical Fitness. FITT principle to design an Exercise programme	9

	Components of Health related Physical Fitness : - Cardiorespiratory Fitness- Muscular strength- Muscular endurance- Flexibility- Body composition.	
2	Concept of Health and Wellness: Health and wellness differentiation, Factors affecting health and wellness. Mental health and Factors affecting mental health. Sports and Socialization: Sports and character building - Leadership through Physical Activity and Sports Diet and nutrition: Exploring Micro and Macronutrients: Concept of Balanced diet Carbohydrate & the Glycemic Index Animal & Plant - based Proteins and their Effects on Human Health Dietary Fats & their Effects on Human Health Essential Vitamins and Minerals	9
3	Lifestyle management strategies to prevent / manage common hypokinetic diseases and disorders - Obesity - Cardiovascular diseases (e.g., coronary artery disease, hypertension) - Diabetes - Osteoporosis - Musculoskeletal disorders (e.g., osteoarthritis, Low back pain, Kyphosis, lordosis , flat foot, Knock knee) Meaning, Aims and objectives of yoga - Classification and importance of of Yogic Asanas (Sitting, Standing, lying) Pranayama and Its Types - Active Lifestyle and Stress Management Through Yoga Understanding on substance abuse and addiction - Psychoactive substances & its ill effects- Alcohol- Opioids- Cannabis -Sedative - Cocaine - Other stimulants, including caffeine -Hallucinogens - Tobacco -Volatile solvents.	9
4	First aid and principles of First Aid: Primary survey: ABC (Airway, Breathing, Circulation). Qualities of a Good First Aider First aid measures for: - Cuts and scrapes - Bruises - Sprains - Strains - Fractures - Burns - Nosebleeds. First Aid Procedures: Cardiopulmonary Resuscitation (CPR) - Heimlich Maneuver -	9

	Applying a sling Sports injuries: Classification (Soft Tissue Injuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain)	
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Additional Topics

- Need and Importance of Physical Education and its relevance in interdisciplinary context. Understanding of the Endocrine System
- Developing a fitness profile
- Healthy foods habits for prevention and progression of Lifestyle Diseases. Processed foods and unhealthy eating habits.
- Depression - Anxiety - Stress
- Different ways of carrying an injured person. Usage of Automated external defibrillator

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Case Study/Micro project/Presentation	Activity evaluation	Total
10	10	20	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the different human body systems and describe various types of physical activities along with methods to measure and quantify these activities.	K2
CO2	Explain how to maintain or improve health and wellness through psychological practices, dietary habits, and sports activities.	K2
CO3	Discuss about common hypokinetic disorders and musculoskeletal disorders, and describe the importance of leading a healthy lifestyle through the practice of yoga and abstaining from addictive substances.	K2
CO4	Explain the basics of first aid and describe common sports injuries	K2

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Foundations of Nutrition	Bhavana Sabarwal	Commonwealth Publishers	1999
2	Anatomy and physiology in health and illness.	Ross and Wilson	Waugh, A., & Grant, A.	2022

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Fit to be Well Essential Concept	Thygerson, A. L., Thygerson, S. M., & Thygerson, J. S.	Jones & Bartlett Learning.	2018
2	Introduction to physical education, fitness, and sport.	Siedentop, D., Van der Mars, H.	Human kinetics.	2022
3	Substance Use Disorders. Manual for Physicians.	Lal, R., & Ambekar, A. (2005).	National Drug Dependence Treatment Centre, New Delhi	2005
4	The exercise health connection-how to reduce your risk of disease and other illnesses by making exercise your medicine.	Nieman, D. C., White, J. A	Public Health	1998
5	ACSM's resource manual for guidelines for exercise testing and prescription.	Lippincott Williams & Wilkins.	American College of Sports Medicine.	2012
6	Exercise Physiology: energy, nutrition and human performance.	Katch, F. I., Katch, V. L., & McArdle, W. D.	Lippincott Williams & Wilkins	2010

Continuous Internal Evaluation Marks (CIE): for the Health and wellness course

Students will be evaluated as follows.

Title	Method of Evaluation
Attendance	Students must attend at least 75% of both theory and practical classes. They will receive 10 marks based on their class attendance. Students who do not meet the minimum attendance requirement for a course, as specified in the regulations, will not be eligible to proceed to the next criteria.
Assignment / Presentation	Assignments will be given to students to assess their understanding of the subjects taught. Students will be required to make presentations on the subjects taught in class, and their understanding of the subjects will be assessed. Based on the Assignments and Presentations the students will be awarded marks out of 20
Activity Evaluation	The Assignment / Presentation faculty handling the class will use the tests from the Fitness Protocols and Guidelines for ages 18+ to 65 years, as set forth by FIT India. Measurements will be taken for all the tests of the FIT India Fitness Protocol and the evaluation will be based on the benchmark score received for the following tests: 1. V Sit Reach Test 2. Partial Curl Up - 30 seconds 3. Push Ups (Male) and Modified Push Up (Female) 4. Two (2) Km Run/Walk Students who achieve a total benchmark score of 8 across the aforementioned

	4 tests will be awarded pass marks for activity evaluation. Students who score better will be awarded a maximum mark of 20.
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Activity Evaluation - Special Circumstances	Physically challenged and medically unfit students can opt for an objective test to demonstrate their knowledge of the subjects taught. Based on their performance in the objective test, they will be awarded marks out of 20.
Activity Evaluation n - Special Considerations - NCC	Students who enrolled themselves in the NCC during the course period (between the start and end dates of the program) and attended 5 college level parades will be awarded pass marks for activity evaluation. Students who attend more parades will be eligible for a maximum mark of 20 based on their parade attendance.

Tests to evaluated as per Criterion - 2 and Benchmark Scores

V Sit Reach Test

How to Perform:

1. The subject removes their shoes and sits on the floor with the measuring line between their legs and the soles of their feet placed immediately behind the baseline, heels 8-12" apart.
2. The thumbs are clasped so that hands are together, palms facing down and placed on the measuring line.
3. With the legs held flat by a partner, the subject slowly reaches forward as far as possible, keeping the fingers on baseline and feet flexed.
4. After three tries, the student holds the fourth reach for three seconds while that distance is recorded.
5. Make sure there are no jerky movements, and that the fingertips remain level and the legs flat.

Infrastructure/Equipment Required:

1. A tape for marking the ground, marker pen, and ruler.
2. With the tape mark a straight line two feet long on the floor as the baseline, and a measurement line perpendicular to the midpoint of the baseline extending two feet on each side.
3. Use the marker pen to indicate every centimeter and millimeter along the measurement line. The point where the baseline and the measuring line intersect is the zero point.

Scoring: The score is recorded in centimeters and millimeters as the distance reached by the hand, which is the difference between the zero point (where the baseline and measuring line intersect) and the final position.

Scoring for V Sit Reach Test for Males

Level	Benchmark Score	Measurement (cm)
1	2	<11
2	4	12-13
3	6	14-17
4	7	18-19
5	8	20-21
6	9	22
7	10	>22

Scoring for V Sit Reach Test for Females

Level	Benchmark Score	Measurement (cm)
1	2	<14
2	4	15-16
3	6	17-19
4	7	20-21
5	8	22
6	9	23
7	10	>23

Partial Curl Up – 30 sec

How to Perform:

1. The subject lies on a cushioned, flat, clean surface with knees flexed, usually at 90 degrees, with hands straight on the sides (palms facing downwards) closer to the ground, parallel to the body.
2. The subject raises the trunk in a smooth motion, keeping the arms in position, curling up the desired amount (at least 6 inches above/along the ground towards the parallel strip).
3. The trunk is lowered back to the floor so that the shoulder blades or upper back touch the floor.

Infrastructure/Equipment Required:

Flat clean cushioned surface with two parallel strips (6 inches apart), Stopwatch Scoring:

Record the maximum number of Curl ups in a certain time period 30 seconds. **Scoring for**

Partial Curl Up - 30 seconds Test for Males

Level	Benchmark Score	Numbers
1	2	<25
2	4	25-30
3	6	31-34
4	7	35-38
5	8	39-43
6	9	44-49
7	10	>49

Scoring for Partial Curl Up - 30 seconds Test for Females

Level	Benchmark Score	Numbers
1	2	<18
2	4	18-24
3	6	25-28
4	7	29-32
5	8	33-36
6	9	37-43
7	10	>43

Push Ups for Male/Modified Push Ups for Female How to Perform:

1. A standard push up begins with the hands and toes touching the floor, the body and legs in a straight line, feet slightly apart, the arms at shoulder width apart, extended and at a right angle to the body.
2. Keeping the back and knees straight, the subject lowers the body to a predetermined point, to touch some other object, or until there is a 90-degree angle at the elbows, then returns back to the starting position with the arms extended.
3. This action is repeated, and the test continues until exhaustion, or until they can do no more in rhythm or have reached the target number of push-ups.
4. For Female: push-up technique is with the knees resting on the ground.

Infrastructure/Equipment Required:

Flat clean cushioned surface/Gym mat

Scoring: Record number of correctly completed pushups.

Scoring for Push Ups for Male

Level	Benchmark Score	Numbers
1	2	<4
2	4	04- 10
3	6	11 -18
4	7	19-34
5	8	35-46
6	9	47-56
7	10	>56

Scoring for Modified Push Ups for Female

Level	Benchmark Score	Numbers
1	2	0-1
2	4	2 - 5
3	6	6 -10
4	7	11 - 20
5	8	21-27
6	9	27-35
7	10	>35

2 Km Run/Walk How to Perform:

1. Participants are instructed to run or walk 2 kms in the fastest possible pace.
2. The participants begin on signal (Starting point)- “ready, start”. As they cross the finish line, elapsed time should be announced to the participants.
3. Walking is permitted but the objective is to cover the distance in the shortest possible time.

Infrastructure/Equipment Required:

Stopwatch, whistle, marker cone, lime powder, measuring tape, 200 or 400 m with 1.22 m (minimum 1 m) width preferably on a flat and even playground with a marking of starting and finish line. You can also use any application on your mobile phone that tells you the distance.

Scoring: Time taken for completion (Run or Walk) in min, sec.

Scoring for 2Km Run/walk for Male

Level	Benchmark Score	Minutes: Seconds
1	2	> 11:50
2	4	10:42
3	6	09:44
4	7	08:59
5	8	08:33
6	9	07:37
7	10	>07:37

Scoring for 2Km Run/walk for Female

Level	Benchmark Score	Minutes : Seconds
1	2	>13:47
2	4	12:51
3	6	12:00
4	7	11:34
5	8	10:42
6	9	09:45
7	10	>09:45

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBVAT305
Course Name: HEALTH AND WELLNESS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|---|-----|-----|
| 1 | Explain the role of the Respiratory System during physical activity. Discuss how the Cardiovascular System supports the Musculoskeletal System during exercise. | CO1 | (3) |
| 2 | Calculate the Energy Expenditure for a person performing moderate-intensity physical activity for 45 minutes. Explain the concept of Metabolic Equivalent of Task (MET) in relation to quantifying physical activity. | CO1 | (3) |
| 3 | Design a fitness programme using the FITT principle for an individual aiming to improve cardiovascular fitness. Justify your choice of frequency, intensity, time, and type of exercise. | CO2 | (3) |
| 4 | Discuss the components of health-related physical fitness and explain how each component contributes to overall well-being. Provide examples of exercises that target each component. | CO2 | (3) |
| 5 | Explain the difference between aerobic and anaerobic physical activity. Provide examples of each type of exercise and discuss their respective benefits on health and fitness. | CO3 | (3) |
| 6 | Critically analyze the importance of an active lifestyle in stress management through Yoga. How can regular practice of Yoga help individuals cope with mental health challenges? | CO3 | (3) |
| 7 | Examine the effects of dietary fats on human health. Differentiate between animal and plant-based fats, and discuss how their consumption can impact cardiovascular health and overall well-being. | CO4 | (3) |
| 8 | Suggest a first aid procedure for a sports-related soft tissue injury. Describe the primary survey steps and initial actions to be taken when providing first aid to an individual with a muscle strain during a sports activity. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- 9 What are the major muscle groups of the human body? Briefly explain the functions of each major muscle group. CO1 (9)

OR

- 10 Explain the concept of MET (Metabolic Equivalent of Task) and its significance in quantifying physical activity. CO1 (9)

Module 2

- 11 Differentiate between aerobic and anaerobic physical activities. Provide examples for each type. CO2 (9)

OR

- 12 How does the FITT principle help in designing an exercise program? Explain each component of the FITT principle. CO2 (9)

Module 3

- 13 Discuss the components of health-related physical fitness. Why is each component important for overall well-being? CO3 (9)

OR

- 14 Explain the concept of lifestyle management strategies to prevent and manage common hypokinetic diseases. Provide examples of at least three hypokinetic diseases. CO3 (9)

Module 4

- 15 Describe the ill effects of substance abuse and addiction on physical and mental health. Choose one psychoactive substance and elaborate on its impact. CO4 (9)

OR

- 16 Create a step-by-step guide of performing Cardiopulmonary Resuscitation (CPR). Explain each step thoroughly. CO4 (9)

SEMESTER 3

CONSTITUTION OF INDIA

Course Code	BBMDT306	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	MDC

Course Objectives:

1. Provide students with knowledge of the structure, features, and key provisions of the Constitution of India, including its historical background and significance.
2. Help students understand the constitutional provisions related to environmental protection and human rights, fostering a sense of responsibility and civic awareness.
3. Encourage students to develop discipline, respect for law, and ethical conduct in their daily lives through awareness of constitutional duties and values.
4. Equip learners with the confidence, legal awareness, and social understanding needed to face societal challenges and contribute positively to the community.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Definition, historical background, features, preamble, territory, citizenship - Definition of constitution, historical background, salient features of the constitution. Preamble of the constitution, union and its territory. Meaning of citizenship, types, termination of citizenship. State, fundamental rights, directive principles, duties. Definition of state, fundamental rights, general nature, classification, right to equality, right to freedom, right against exploitation. Right to freedom of religion, cultural and educational rights, right to constitutional remedies. Protection in respect of conviction for offences. Directive principles of state policy, classification of directives, fundamental duties.	9

2	The machinery of the union government. The Union executive, the President, the vice President, the council of ministers, the Prime minister, Attorney-General, functions. The parliament, composition, Rajya sabha, Lok sabha, qualification and disqualification of membership, functions of parliament. Union judiciary, the supreme court, jurisdiction, appeal by special leave.	9
3	Government machinery in the states The State executive, the Governor, the council of ministers, the Chief minister, advocate general, union Territories. The State Legislature, composition, qualification and disqualification of membership, functions. The state judiciary, the high court, jurisdiction, writ jurisdiction.	9
4	The federal system, Statutory Institutions, miscellaneous provisions. Relations between the Union and the States, legislative relation, administrative relation, financial Relations, Inter State council, finance commission. Emergency provision, freedom of trade, commerce and intercourse, comptroller and auditor general of India, public Services, public service commission, administrative Tribunals. Official language, elections, special provisions relating to certain classes, amendment of the Constitution.	9

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination-2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the background of the present constitution of India and the fundamental rights and duties of citizens	K2
CO2	Describe the working of the union executive, parliament and judiciary.	K2
CO3	Explain the working of the state executive, legislature and judiciary.	K2
CO4	Describe the special provisions and statutory institutions	K2

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Introduction to the constitution of India	D D Basu	Lexis Nexis	24 th ed 2019
2	The constitution of India	PM Bhakshi	Universal Law	14 th ed 2017

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	The constitution of India	Ministry of law and justice	Govt of India	2019
2	The constitutional law of India	JN Pandey	Central Law agency	51 st ed 2019
3	India's Constitution	MV Pylee	S Chand and company	16 th ed 2016

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBMDT306
Course Name: CONSTITUTION OF INDIA

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Define and explain the term constitution.	CO1	(3)
2	What is the directive principle of state policy?	CO1	(3)
3	List the functions of Attorney general of India.	CO2	(3)
4	Explain the review power of the Supreme court.	CO2	(3)
5	List the qualifications of Governor.	CO3	(3)
6	Explain the term and removal of Judges in High court.	CO3	(3)
7	Explain the powers of the public service commission.	CO4	(3)
8	List three types of emergency under Indian constitution.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Discuss the various methods of acquiring Indian citizenship.	CO1	(9)
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OR

10	Examine the salient features of the Indian constitution.	CO1	(9)
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Module 2

- 11 Describe the procedure of election and removal of the President of India. CO2 (9)
OR

- 12 Supreme court may in its discretion grant special leave to appeal. Examine the situation. CO2 (9)

Module 3

- 13 Discuss the powers of the Governor. CO3 (9)

OR

- 14 X filed a writ petition under Art 226 which was dismissed. Subsequently, he filed a writ petition under Art 32 of the constitution, seeking the same remedy. The Government argued that the writ petition should be dismissed, on the ground of res judicata. Decide. CO3 (9)

Module 4

- 15 Examine the scope of the financial relations between the union and the states. CO4 (9)
OR

- 16 Discuss the effects of proclamation of emergency. CO4 (9)

SEMESTER 3

SAFETY MANAGEMENT

Course Code	BBAET307	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	AEC

Course Objectives:

1. Provide students with comprehensive knowledge of safety management concepts, systems, and the importance of safety in contemporary industrial settings.
2. Equip learners with the ability to evaluate various hazard identification tools and select the most appropriate methods based on industry-specific requirements.
3. Enable students to understand different types of machine guarding devices and energy sources, including their applications and safety implications.
4. Prepare students to undertake safety-related projects and research work, fostering analytical thinking and practical application in real-world contexts.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Need for safety. Safety and productivity. Definitions: Accident, Injury, Unsafe act, Unsafe Condition, Dangerous Occurrence, Reportable accidents. Theories of accident causation. Safety organization- objectives, types, functions, Role of management, supervisors, workmen, unions, government and voluntary agencies in safety. Safety policy. Safety Officer-responsibilities, authority. Safety committee-need, types, advantages. Personal protection in the work environment, Monitoring Safety Performance: Frequency rate, severity rate, incidence rate, activity rate. Housekeeping: Responsibility of management and employees. Advantages	9

	of good housekeeping. 5S of housekeeping. Work permit system- objectives, Typical industrial models and methodology. Entry into confined spaces.	
2	Introduction to construction industry and safety issues in construction Safety in various construction operations – Excavation and filling – Under-water works – Under-pinning & Shoring – Ladders & Scaffolds – Tunneling – Blasting – Demolition – Confined space – Temporary Structures. Familiarization with relevant Indian Standards and the National Building Code provisions on construction safety. Relevance of ergonomics in construction safety. Ergonomics Hazards - Musculoskeletal Disorders and Cumulative Trauma Disorders.	9
3	Machinery safeguard-Point-of-Operation, Principle of machine guarding -types of guards and devices. Safety in turning, and grinding. Welding and Cutting-Safety Precautions of Gas welding and Arc Welding. Material Handling-Classification-safety consideration- manual and mechanical handling. Handling assessments and techniques- lifting, carrying, pulling, pushing, palletizing and stocking. Material Handling equipment-operation & maintenance. Maintenance of common elements-wire rope, chains slings, hooks, clamps. Hearing Conservation Program in Production industries.	9
4	Hazard and risk, Types of hazards –Classification of Fire, Types of Fire extinguishers, fire explosion and toxic gas release, Structure of hazard identification and risk assessment. Identification of hazards: Inventory analysis, Fire and explosion hazard rating of process plants - The Dow Fire and Explosion Hazard Index, Preliminary hazard analysis, Hazard and Operability study (HAZOP)) – methodology, criticality analysis, corrective action and follow-up. Control of Chemical Hazards, Hazardous properties of chemicals, Material Safety Data Sheets (MSDS)..	9

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Describe the theories of accident causation, selection of personal protective equipment and importance of housekeeping.	K2
CO2	Explain different safety issues in construction industries.	K2
CO3	Describe various hazards associated with different machines and mechanical material handling.	K2
CO4	Utilise different hazard identification tools in different industries with the knowledge of different types of chemical hazards.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Industrial Safety, Health and Environment management systems	R.K Jain	Khanna Publications.	4 th edition, 2000
2	Safety management System and Documentation training Programme handbook	Paul S V	CBS Publication.	4 th edition, 2000
3	Safety management in Industry.	Krishnan, N.V.	Jaico Publications	1997

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Principles Of Industrial Safety Management	Akhil Kumar Das	PHI	2020
2	Essentials of safety management	Ananad Singh, Kaila, Ravisankar and Kamat	Himalaya Publishing House	1 st edition, 2015
3	Industrial Safety Management	Pravin M. Pathak, and Jayant P. Khairnar	Notion Press	2022

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBAET307
Course Name: SAFETY MANAGEMENT

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|--|-----|-----|
| 1 | Differentiate Unsafe act and Unsafe conditions with suitable examples | CO1 | (3) |
| 2 | Which are five 'S' used in housekeeping?. | CO1 | (3) |
| 3 | List the various safety features of ladders. | CO2 | (3) |
| 4 | How safety of the workers can be ensured during demolition operations. | CO2 | (3) |
| 5 | Which are the hazards associated with manual material handling? | CO3 | (3) |
| 6 | Discuss the safety issues of Gas welding operations. | CO3 | (3) |
| 7 | Differentiate Hazard and Risk. | CO4 | (3) |
| 8 | Why MSDS is mandatory for chemical products? | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | List the various accident causation theories and explain any one in detail.. | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | How will you compare the safety performance of two industries? Explain with suitable examples. | CO1 | (9) |
|----|--|-----|-----|

Module 2

- 11 Discuss the safety and fire protection facilities required for a high rise building as per National building code. CO2 (9)

OR

- 12 Identify the various hazards during the different stages of building construction. CO2 (9)

Module 3

- 13 Which are the various types of machine guarding devices used in industries. Discuss the suitability of each machine guarding device. CO3 (9)

OR

- 14 Explain the safety issues associated with mechanical material handling. CO3 (9)

Module 4

- 15 What is Hazard and Operability Analysis? How do you conduct a HAZOP analysis? CO4 (9)

OR

- 16 Discuss about different types of chemical hazards. CO4 (9)

SEMESTER 4

BBA (Hons.)

SEMESTER 4

INTRODUCTION TO OPERATIONS MANAGEMENT

Course Code	BBPCT401	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	NIL	Course Type	PCC

Course Objectives:

1. Understand the core concepts, scope, and responsibilities within production and operations management, and differentiate between various production systems and managerial decision areas.
2. Analyze key factors influencing plant location and layout, and evaluate the design and organization of physical facilities to support efficient operational workflows.
3. Apply principles of production planning, control, maintenance, and waste management to optimize manufacturing processes, ensure equipment reliability, and promote resource efficiency.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Production and Operations Management-Introduction -Meaning of Production and Operations, differences between Production and Operations Management, Scope of Production Management, Production System. Types of Production, Benefits of Production Management, Responsibility of a Production Manager, Decisions of Production Management. Operations management: Concept and Functions.	11

2	Plant Location and layout-Meaning and definition –Factors affecting location, Theory and practices, Cost Factor in location – Plant layout Principles – Space requirement – Different types of facilities – Organization of physical facilities – Building, Sanitation, Lighting, Air Conditioning and Safety- Material Handling.	11
3	Production Planning and Control-Definition-Characteristics of Production Planning and Control, Objectives of Production Planning and Control, Stages of Production Planning and Control, Scope of Production Planning & Control, Factors Affecting Production Planning and Control, Role of Production Planning and Control in Manufacturing Industry.	11
4	Maintenance and Waste Management-Introduction – Meaning – Objectives – Types of maintenance, Breakdown, Spares planning and control, Preventive routine, Relative Advantages, Maintenance Scheduling, Equipment reliability and Modern Scientific Maintenance Methods - Waste Management–Scrap and surplus disposal, Salvage and recovery.	11

Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignments	Internal Examination	Reflective Journal and Portfolio	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Analyze the functions, scope, and decisions in production and operations management, and differentiate production systems to understand the role of production managers in organizations.	K4
CO2	Evaluate factors influencing plant location and design optimal facility layouts by applying principles of space planning, safety, and material handling for operational efficiency.	K5
CO3	Apply production planning and control techniques to develop efficient workflows, considering scheduling, resource utilization, and industry-specific factors affecting manufacturing operations..	K3
CO4	Assess maintenance strategies and formulate waste management plans that enhance equipment reliability, reduce breakdowns, and support sustainable industrial operations.	K5

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations Management Concepts, Techniques and Applications	Elaine Cooney and James R Evans	Cengage Learning	2 &2009
2	Production and Operations Management	Pannerselvam	Prentice Hall India Learning Private Limited	3& January 2012

3	Production and Operations Management	Kumar, S Anil	New Age International (P) Ltd., Publishers	2 & 2018
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Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations Management	K. Shridhara Bhat	ISBN	3 rd -2023
2	A Textbook of Operations Management	Dr S K Sarangi	Asian Books Private Limited	2 nd -1 January 2008
3	Production & Operations Management	K Aswathappa, G Sudarsana Reddy	Himalaya Publishing House (Publisher)	1 st -2023

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR
Course Code: BBPCT401
Course Name: Introduction to Operations Management

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks Marks

- | | |
|---|---------|
| 1.What is production Management? | CO1 (3) |
| 2.what are the benefits of production Management? | CO1 (3) |
| 3.Explain the factors that affect the plant layout decision? | CO2 (3) |
| 4.How physical facilities are arranged in a factory? | CO2 (3) |
| 5.What are the characteristics of production planning and control? | CO3 (3) |
| 6.Mention the importance of production control in the manufacturing industry? | CO3 (3) |
| 7.What is meant by maintenance scheduling? | CO4 (3) |
| 8.Explain different types of breakdowns? | CO4 (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9. A) What is meant by productivity? Explain the factors influencing productivity? CO1 (5)

B) Explain Operations management? Concept and functions? CO1 (4)

OR

10.A) Benefits of production management? CO1(4.5)

B) How is production management deferring from Operations Management? CO1(4.5)

Module 2

11a) What is material handling? Discuss the principles of material handling? CO2 (5)

b) Merits and demerits material handling? CO2(4)

OR

12.write a short note on:

a) Product layout CO2 (3)

b) Process layout CO2 (3)

c) Types of Factory building CO2 (3)

Module 3

13.Explain various techniques of production control? CO3(9)

OR

14. Narrate Stages of Production Planning and Control CO3(9)

Module 4

15.a) Analyse the objectives of sound maintenance? CO4 (4)

b) Briefly explain different types of waste? CO4 (5)

OR

16.Explain

a) Maintenance scheduling? CO4 (3)

b) Maintenance methods? CO4 (3)

c) Waste management? CO4 (3)

SEMESTER 4

INTRODUCTION TO HUMAN RESOURCES MANAGEMENT

Course Code	BBPCT402	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PCC

Course Objectives:

1. Understand the fundamental concepts and principles of human resource management
2. Develop skills in recruitment, selection, and onboarding processes.
3. Explore training and development strategies to enhance employee performance and to analyse performance management systems

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Human Resources Management Definition and Scope of HRM, Evolution of HRM, Functions of HRM, Role of HRM in Organizational Success, Challenges in HRM Strategic HRM and its Importance, HRM in the Global Context, HRM and Technology: HR Information Systems (HRIS)	11
2	Recruitment, Selection, and Onboarding Job Analysis and Job Design, Selection Process (Interviews, Tests, Assessments), Onboarding and Orientation, Diversity and Inclusion in Recruitment, The Role of Social Media in Recruitment, Legal Considerations in Recruitment and Selection	11
3	Training and Development Importance of Training and Development, Types of Training Programs, Employee Development and Career Planning, Evaluating	

	Training Effectiveness, E-Learning and Digital Training Platforms, Leadership Development Programs, Succession Planning, Cross-Cultural Training for Global Organizations	11
4	Performance Management and Compensation Performance Appraisal Need and Importance, Methods, Feedback and Coaching, Employee Engagement and Motivation, Managing Employee Relations and Conflict Resolution, Employee Retention Strategies	11

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Analyze the scope, functions, and evolution of HRM, and examine its strategic role and challenges in achieving organizational effectiveness and adaptability.	K4
CO2	Apply effective recruitment, selection, and onboarding strategies by interpreting job requirements, using digital platforms, and ensuring compliance with legal and diversity standards.	K3
CO3	Analyze various employee training and development programs, and evaluate their effectiveness in enhancing performance, leadership, and cross-cultural competence in domestic and global contexts.	K4
CO4	Apply performance appraisal methods and compensation strategies to support employee engagement, resolve conflicts, and enhance retention in dynamic organizational settings.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Human Resource Management.	Gary Dessler, Biju Varkkey	Pearson Education	17 th Edition, 2023
2	Human Resource Management.	K Aswathappa	Mc Graw Hill education	10 th Edition, 2023
3	Human Resource Management: Text and Cases	VSP Rao	Excel Books	2 nd Edition, 2019

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Fundamentals of Human Resource Management	Raymond Noe; John R. Hollenbeck; Barry Gerhart; Patrick M. Wright	Mc Graw Hill education	8 th Edition, 2021,
2	Fundamentals of Human Resource Management	D.A. DeCenzo and S. P. Robbins, S.L Verhulst	Wiley, John Wiley & Sons, Inc	10 th Edition, 2010,

3	Human Resource Management	S S Khanka	S Chand	2 nd Edition, 2019
4	Human Resource Management	P. R. N. Sinha, S. P. Shekhar, Indu Bala	Cengage Learning India Private Limited	2 nd Edition, 2023

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBPCT402

Course Name: INTRODUCTION TO HUMAN RESOURCES MANAGEMENT

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	What are the key functions of Human Resource Management and how do they contribute to organizational success?	CO1	(3)
2	Briefly explain the evolution of HRM and its shift from administrative to strategic importance.	CO1	(3)
3	What is the role of job analysis in designing an effective recruitment strategy?	CO2	(3)
4	How has social media influenced modern recruitment practices? Provide examples.	CO2	(3)
5	Differentiate between training and development. Why is employee development important for long-term organizational growth?	CO3	(3)
6	What are the advantages of using e-learning platforms for employee training?	CO3	(3)
7	What are the key components of an effective performance appraisal system?	CO4	(3)
8	Explain how compensation strategies can influence employee motivation and retention.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Apply the functions of HRM to a growing startup organization. How would HRM support its transition from an informal structure to a formal business entity?	CO1	(9)
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OR

- | | | | |
|----|--|-----|-----|
| 10 | Given an organization facing high employee turnover, apply the principles of HRM to recommend solutions that improve workforce stability and organizational performance. | CO1 | (9) |
|----|--|-----|-----|

Module 2

- | | | | |
|----|--|-----|-----|
| 11 | Design a step-by-step recruitment and selection process for a multinational company hiring for a global leadership role. Justify the methods chosen at each stage. | CO2 | (9) |
|----|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 12 | Develop an onboarding plan for a culturally diverse workforce. How would you apply HRM principles to ensure inclusion and productivity from the start? | CO2 | (9) |
|----|--|-----|-----|

Module 3

- | | | | |
|----|---|-----|-----|
| 13 | Apply the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model to create a training program for mid-level managers in a retail organization. | CO3 | (6) |
|----|---|-----|-----|

CO3 (3)

OR

- | | | | |
|----|---|-----|-----|
| 14 | Propose a leadership development program for future executives in a manufacturing company. How would you align it with career planning and succession strategies? | CO3 | (9) |
|----|---|-----|-----|

Module 4

- | | | | |
|----|---|-----|-----|
| 15 | Design a performance management system for a remote workforce. How would you apply performance appraisal techniques to ensure fairness, engagement, and accountability? | CO4 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 16 | Apply motivational theories to develop a compensation package that balances financial and non-financial rewards in a nonprofit organization. Justify your choices. | CO4 | (9) |
|----|--|-----|-----|

SEMESTER 4

INTRODUCTION TO FINANCIAL MANAGEMENT

Course Code	BBPCT403	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mns.
Prerequisites (if any)	Nil	Course Type	PCC

Course Objectives:

1. To impart a thorough understanding of the principles and practices of financial management.
2. To enable students to analyze and interpret financial data for effective decision-making.
3. To develop critical thinking in evaluating investment, financing, and dividend decisions.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Financial Management Scope, objectives, and functions of financial management, Financial decision-making: Investment, financing, and dividend decisions, Wealth maximization vs. profit maximization, Role of financial management in strategic planning.	11
2	Financial Statement Analysis Components of financial statements: Income statement, balance sheet, and cash flow statement, Tools of analysis: Ratio analysis, common size analysis, and trend analysis., Limitations of financial statement analysis.	11
3	Capital Budgeting Nature and significance of capital budgeting, Techniques: Payback period, Net Present Value (NPV), Internal Rate of Return (IRR), and Profitability Index (PI), Risk analysis in capital budgeting.	11

4	Working Capital Management Meaning and significance of working capital, Components of working capital: Cash, receivables, and inventory, Financing working capital: Sources and management.	11
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Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the scope and functions of financial management and distinguish between profit maximization and wealth maximization objectives	K2
CO2	Apply ratio, trend, and common size analysis to interpret financial statements and assess a firm's financial performance	K3

CO3	Analyze investment proposals using capital budgeting techniques like NPV, IRR, and Payback Period to support decision-making.	K4
CO4	Apply working capital management strategies to optimize cash, receivables, and inventory for efficient short-term financial planning.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	FINANCIAL MANAGEMENT	I M PANDY	PEARSON	12 TH EDITION 2021
2	FINANCIAL MANAGEMENT: THEORY AND PRACTICE	PRASANNA CHANDRA	Mc Graw Hill India	11 th edition 2022
3	Fundamentals of Financial Management	James C. Van Horne and John M. Wachowicz	Pearson Education	13 th edition 2008

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Corporate Finance	Stephen A. Ross, Randolph W. Westerfield, and Jeffrey Jaffe	Mc Graw Hill India	12 th edition 2019
2	Principles of Corporate Finance	Richard A. Brealey, Stewart C. Myers, and Franklin Allen	Mc Graw Hill India	13 th Edition 2019
3	Essentials of Financial Management	Eugene F. Brigham and Joel F. Houston	Cengage Learning	4 th edition 2018

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBPCT403
Course Name: INTRODUCTION TO FINANCIAL MANAGEMENT

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Define Financial Management and its Scope?	CO1	(3)
2	Differentiate between wealth maximization and profit maximization.	CO1	(3)
3	Name the components of financial statements.	CO2	(3)
4	What is ratio analysis, and why is it important?	CO2	(3)
5	Define capital budgeting and state its significance.	CO3	(3)
6	What is the Payback Period method in capital budgeting?	CO3	(3)
7	Define working capital and its components.	CO4	(3)
8	Why is working capital management important for a business?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain the three major financial decision areas: Investment, financing, and dividend decisions, with suitable examples.	CO1	(9)
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OR

10	Discuss the role of financial management in strategic planning and achieving organizational goals.	CO1	(9)
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Module 2

- 11 Explain the tools of financial statement analysis: Ratio analysis, common size analysis, and trend analysis. CO2 (9)

OR

- 12 Discuss the importance of analyzing the income statement, balance sheet, and cash flow statement. CO2 (3)
(3)
(3)

Module 3

- 13 A project requires an initial investment of ₹5,00,000 and is expected to generate cash inflows of ₹1,50,000 annually for 5 years. If the discount rate is 10%, calculate the NPV of the project. Should the project be accepted based on the NPV rule? Explain. CO3 (6)
CO3 (3)

OR

- 14 Discuss the significance of capital budgeting decisions in long-term financial planning.. CO3 (9)

Module 4

- 15 Discuss the components of working capital: Cash, receivables, and inventory. CO4 (9)

OR

- 16 Explain the significance of working capital management and the factors influencing it. CO4 (9)

SEMESTER S4

BUSINESS REPORT AND PRESENTATION TOOLS

Course Code	BBSET404	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	2:0:2:0	ESE Marks	60
Credits	3	Exam Hours	2 Hrs 30 Min.
Prerequisites (if any)	None	Course Type	SEC

Course Objectives: This course is offered to equip participants with the knowledge and practical techniques needed to produce professional reports and deliver impactful presentations using software tools including GenAI.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Business reports/ Documents using word processing software – Microsoft Word/ Google docs/ equivalent software – Creating and navigating through a document – Formatting – Customizing options and views – Saving and printing documents – file naming conventions – folder organization for projects - inserting and formatting texts and paragraphs – creating and modifying a table – creating and modifying a list	6
2	Creating and Managing references in the word processing software – inserting and formatting graphical elements – managing document options and settings – preparing reports for review – managing changes – basic version control principles - track changes, compare documents, accepting/rejecting changes - creating and managing index	6
3	Business presentations using any free or commercial software – navigating the interface and create presentations – adding and	6

	formatting text on slides – using charts and tables - Customizing the interface for better visual appeal – using slide masters – formatting slide background – adding graphical elements – animating slide content – adding multimedia elements – Story telling in business presentations.	
4	Introduction to Generative AI for business communication – overview of AI – ethical considerations – using GenAI to assist in drafting report outlines and executive summaries, employing GenAI for rephrasing, summarizing and improving readability of text – Generating text for slide content, speaker notes and presentation titles using AI	6

Lab Activities (20 hours minimum)

Word processing software

- Create a New Document & Save It
- Apply Font Formatting (Bold, Italic, Underline)
- Change Font Size & Color
- Text Alignment Practice
- Create a Bullet List
- Insert a Table & Format Borders
- Merge & Split Table Cells
- Set Margins & Page Orientation
- Insert a Page Break
- Apply Page Borders
- Insert a Header & Footer
- Insert & Resize an Image
- Wrap Text Around an Image
- Use Find & Replace
- Check Spelling & Grammar
- Insert a Hyperlink
- Save & Export as PDF
- Use Columns to Format Text
- Create a Numbered List
- Use GenAI tools

Presentation software

- Adding and Deleting Slides
- Changing Font
- Applying a Design Template
- Changing Slide Layout
- Changing background
- Inserting a picture
- Inserting a shape
- Inserting a picture from the Internet
- Inserting a table
- Creating an organization chart
- Transitions between slides
- Animations
- Slideshow
- Use GenAI tools

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination- 1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
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• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60
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Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Create and format business documents using word processing software by applying text formatting, layout tools, tables, and lists to produce professional reports.	K2
CO2	Manage and review documents effectively by using referencing tools, tracked changes, version control, and indexing features for collaborative business reporting.	K2
CO3	Design and deliver impactful business presentations by using visual elements, slide masters, multimedia content, and storytelling techniques.	K3
CO4	Apply Generative AI tools responsibly to enhance business communication by drafting, summarizing, and improving content for documents and presentations.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Computer Applications in Business	Dr.Sandeep Srivastava, Meera Goyal	SBPD Publications	2025

2	Computer Applications in Business	Vallabhan S.V. Srinivasa	Sultan Chand & Sons	2011
3	Generative AI Essentials	Dr. Priyanka Singh & Hariom Singh	BPB Publications	2025
4	Business Communication	Meenakshi Raman & Prakash Singh	Oxford University Press	2 nd ed 2012

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Data visualization and presentation with Microsoft office	Valerie M. Sue, Matthew T. Griffin	SAGE Publications	2015
2	Business Computer Applications	Amy Savoury; Abigail Rusu; Joy Perrin; and Julie Lyon	Press Books	2022
3	Business Communication: Connecting at Work	Hory Sankar Mukerjee	Oxford University Press	2023
4	Generative AI for Enterprises	Vishal Anand	BPB Publications	2024

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBSET404

Course Name: BUSINESS REPORT AND PRESENTATION TOOLS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|---|-----|-----|
| 1 | Define file naming conventions and explain their importance in document management. | CO1 | (3) |
| 2 | List any three formatting options available in Microsoft Word or Google Docs and explain their usage. | CO1 | (3) |
| 3 | What is version control in word processing? Mention any two tools used for it. | CO2 | (3) |
| 4 | Describe the use of “Track Changes” and how it helps in collaborative editing. | CO2 | (3) |
| 5 | What is the role of slide masters in presentations? | CO3 | (3) |
| 6 | List any three multimedia elements you can add to a slide and state their purpose. | CO3 | (3) |
| 7 | What are ethical considerations in using Generative AI for business communication? | CO4 | (3) |
| 8 | Give two examples of how Generative AI can improve the readability of a business report. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | What are the key steps involved in creating and navigating through a document in a word processing software? | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | Create a formatted business report layout using word processing software for a quarterly performance review. Include sections such as title, headings, a table, and a bullet list. | CO1 | (9) |
|----|--|-----|-----|

Module 2

- | | | | |
|----|---|-----|-----|
| 11 | Describe the steps involved in managing document options and settings in a word processing software | CO2 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 12 | Explain the process of inserting and formatting graphical elements in a word processing software | CO2 | (9) |
|----|--|-----|-----|

Module 3

- | | | | |
|----|--|-----|-----|
| 13 | Discuss the process of adding and formatting text on slides in a presentation software | CO3 | (9) |
|----|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 14 | Discuss the visual and structural principles of storytelling in business presentations. Give examples of techniques used to engage the audience. | CO3 | (9) |
|----|--|-----|-----|

Module 4

- | | | | |
|----|--|-----|-----|
| 15 | Demonstrate how Generative AI tools can be used to draft a summary and rephrase a technical paragraph for clarity. Include practical examples. | CO4 | (9) |
|----|--|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 16 | Explain how GenAI tools can assist in generating slide content, speaker notes, and presentation titles. Highlight benefits and limitations. | CO4 | (9) |
|----|---|-----|-----|

SEMESTER 4

BUSINESS ETHICS AND CSR

Course Code	BBVAT405	CIE Marks	40
Teaching Hours/Week (L: T: P: R)	3:0:0:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	VAC

COURSE OBJECTIVES:

1. Understand the nature and significance of business ethics and evaluate its role in promoting ethical decision-making within organizational contexts.
2. Identify and analyze key ethical challenges and dilemmas across functional areas such as finance, marketing, human resources, and operations.
3. Explain the principles of corporate governance and corporate social responsibility (CSR), and assess how ethical frameworks support sustainable and accountable business practices.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	INTRODUCTION: Introduction to Business Ethics – Meaning and Nature of Ethics – Definition and Importance of Business Ethics – Characteristics of Ethical Business Practices – Causes of Unethical Behavior in Business -Major Ethical Theories: Utilitarianism, Deontology, Virtue Ethics - Indian Ethos and Value System - Indian Work Ethics - Ethics vs. Law	9
2	ETHICS IN BUSINESS FUNCTIONS: Ethics in Business Functions - Ethics in Finance - Window Dressing - Insider Trading - Misleading Financial Analysis - Ethics in Human Resources - Workplace Discrimination (Gender, Age, Race) - Sexual Harassment - Privacy Issues - Occupational Safety - Ethics in Marketing - Ethical Pricing (Price Discrimination, Price Fixing) - Ethical Advertising Deceptive Ads, Surrogate Advertising) - Ethics in	9

	Production & IT - Environmental Concerns - Product Safety - Ethics in IT Use and Data Privacy	
3	CORPORATE GOVERNANCE: Corporate Governance - Definition and Importance - Principles and Elements of Good Corporate Governance - Theories of Corporate Governance: Agency Theory, Shareholder Theory, Stakeholder Theory - Role of Board of Directors - Corporate Governance in India - Overview of Companies Act Provisions	9
4	CORPORATE SOCIAL RESPONSIBILITY (CSR): Corporate Social Responsibility and Ethics Implementation - Meaning and Evolution of CSR - Importance of CSR in Modern Business - CSR Strategies and Practices - Challenges in CSR Implementation - Whistle Blowing: Meaning and Types - Legal Protection for Whistle-blowers - Tips for Effective Whistle Blowing - Creating an Ethical Organisation: Code of Ethics, Ethics Training, Ethics Committees and Officers, Ethics in Audit and Transparency.	9

Course Assessment Method

(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered, and in Part B, each student can choose any one full question out of the two questions.

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 subdivisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, students should be able to:

Course Outcomes (COs)		Bloom's Knowledge Level (KL)
CO1	Explain the fundamental concepts of business ethics, ethical theories, and the role of ethics in business decision-making.	K2
CO2	Analyze ethical issues in various business functions such as finance, marketing, human resources, and production using ethical frameworks.	K4
CO3	Examine corporate governance practices and the ethical responsibilities of directors and committees in ensuring transparency and accountability	K3
CO4	Analyze an ethics program or CSR strategy that aligns with organizational goals and promotes ethical behavior and sustainable business practices.	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

TEXT BOOKS				
Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1.	Business Ethics and Corporate Governance	A.C. Fernando	Pearson Education	2nd Edition, 2019
2.	Business Ethics and Corporate Social Responsibility	S.K. Bhatia	Deep & Deep Publications	Revised Edition, 2018

REFERENCE BOOKS				
Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1.	Business Ethics: Concepts and Cases	Manuel G. Velasquez	Pearson Education	8th Edition, 2017
2.	Corporate Governance: Principles, Policies and Practices	A. C. Fernando	Pearson Education	3rd Edition, 2018

Video Links (NPTEL, SWAYAM...)	
1.	https://kristujayanti.digimat.in/nptel/courses/video/110105079/L22.html
2.	https://onlinecourses.swayam2.ac.in/imb25_mg62/preview

MODEL QUESTION PAPER

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBVAT405

Course Name: BUSINESS ETHICS & CSR

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|---|-----|-----|
| 1 | Explain the meaning and nature of ethics in a business context. | CO1 | (3) |
| 2 | Differentiate between ethics and law with suitable examples. | CO1 | (3) |
| 3 | Analyze how insider trading violates ethical principles in financial decision-making. | CO2 | (3) |
| 4 | Identify and explain two ways in which workplace discrimination can impact organizational culture. | CO2 | (3) |
| 5 | Do you think good corporate governance improves investor confidence? Give reasons for your answer. | CO3 | (3) |
| 6 | In your opinion, is the role of the Board of Directors more important than that of shareholders? Justify briefly. | CO3 | (3) |
| 7 | What is whistle-blowing? Name two types of whistle-blowing. | CO4 | (3) |
| 8 | Mention any two ways a company can promote ethics in the workplace. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- 9 Describe the characteristics of ethical business practices and discuss why they are important in today's business environment. CO1 (9)

OR

- 10 Compare and contrast the major ethical theories: Utilitarianism, Deontology, and Virtue Ethics. Explain how each theory can be applied in business decision-making. CO1 (9)

Module 2

- 11 Examine the ethical implications of deceptive advertising and surrogate advertising. How do these practices affect consumer trust and brand reputation? CO2 (9)

OR

- 12 Analyze the ethical issues involved in IT use and data privacy. Evaluate how companies can balance innovation with responsible data management. CO2 (9)

Module 3

- 13 Evaluate the importance of the principles of good corporate governance in ensuring ethical business practices. Support your answer with examples. CO3 (9)

OR

- 14 Compare Agency Theory, Shareholder Theory, and Stakeholder Theory. Which theory do you think is most effective for modern businesses, and why? CO3 (9)

Module 4

- 15 Explain the importance of CSR in today's business world. What are some challenges companies face while implementing CSR activities? CO4 (9)

OR

- 16 How can an organisation create and maintain an ethical culture? Discuss with reference to ethics training, code of ethics, ethics committees, and transparency. CO4 (9)

SEMESTER 4
INDIAN ECONOMY AND POLICY

Course Code	BBMDT406	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	MDC

Course Objectives:

1. Provide students with a foundational knowledge of the historical development, structural composition, and key features of the Indian economy.
2. Examine the functioning of core economic sectors (agriculture, industry, and services) and assess significant policy initiatives impacting India's economic landscape.
3. Enable students to critically assess current issues such as unemployment, inflation, inequality, and institutional reforms affecting economic growth and development.
4. Develop the ability to analyze the impact of government interventions, economic planning, and global economic trends on India's economic trajectory.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Historical and Structural Aspects of the Indian Economy - Structure of Indian economy in the pre-colonial period - Economic consequences of British colonial rule - Objectives and strategies of economic planning (1951–1990) - Role of the public sector and import-substitution strategy - Economic crisis of 1991 and the need for reforms - Liberalization, Privatization, and Globalization (LPG reforms) - Demographic trends and population policy - Poverty, income inequality, and regional disparities	9
2	Sectoral Analysis – Agriculture, Industry, and Services - Role of agriculture in economic development - Green Revolution and its	9

	socio-economic impact - Agricultural price policy: MSP, subsidies, and food security - Land reforms and institutional changes in rural India - Industrial policy pre- and post-1991 - Role of public sector enterprises and privatization - Development of the services sector: IT, finance, and telecom - Role of startups, digital economy, and entrepreneurship	
3	Economic Policies and Institutions - Fiscal policy: Components, budgetary process, and trends - Direct and indirect taxation: GST and tax reforms - Fiscal deficit and FRBM Act - Monetary policy: Instruments and objectives - Role and functioning of the Reserve Bank of India - Financial sector reforms: Banking, NBFCs, financial inclusion - Exchange rate policy and capital flows - Trade policy: WTO, FDI, FTAs, and India's export competitiveness.	9
4	Contemporary Issues and Policy Challenges - Employment trends and labor market reforms - Informal sector and gig economy - Environmental sustainability and climate change policies - Infrastructure and urban development policies - Regional inequality and balanced regional development - Education and health sector reforms (e.g., NEP, Ayushman Bharat) - Digital India, Aadhaar, and governance reforms - India's economic diplomacy: G20, BRICS, WTO, and global positioning.	9

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks ($8 \times 3 = 24 \text{ marks}$)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. ($4 \times 9 = 36 \text{ marks}$)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:		Bloom's Knowledge Level (KL)
CO1	Explain the structural and historical evolution of the Indian economy.	K2
CO2	Discuss the role and performance of key sectors— agriculture, industry, and services.	K2
CO3	Explain India's macroeconomic policy framework including fiscal, monetary, and trade policies.	K2
CO4	Discuss contemporary challenges and policy measures in the Indian economy.	K2

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Indian Economy	V.K. Puri & S.K. Mishra	Himalaya Publishing House	41 st edition, 2023
2	Indian Economy: Performance and Policies	Uma Kapila	Academic Foundation	25 th edition, 2024
3	Indian Economy Since Independence	Uma Kapila	Academic Foundation	34 th edition 2023

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	India's Economic Policy: Preparing for the Twenty-first Century	Bimal Jalan	Penguin Books	1996
2	Backstage: The Story Behind India's High Growth Years	Montek S. Ahluwalia	Rupa Publications	2019
3	India Transformed: 25 Years of Economic Reforms	Rakesh Mohan	Penguin Random House India	2018

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBMDT406
Course Name: INDIAN ECONOMY AND POLICY

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|--|-----|-----|
| 1 | Explain any two structural features of the Indian economy at the time of independence. | CO1 | (3) |
| 2 | What were the major objectives of India's Five-Year Plans? | CO1 | (3) |
| 3 | What is Minimum Support Price (MSP)? State its significance. | CO2 | (3) |
| 4 | Mention any two challenges faced by the Indian manufacturing sector. | CO2 | (3) |
| 5 | Define fiscal deficit. Why is it important in fiscal policy? | CO3 | (3) |
| 6 | What is the role of the Reserve Bank of India in inflation control? | CO3 | (3) |
| 7 | State two key features of the National Education Policy (NEP) 2020. | CO4 | (3) |
| 8 | What are the major causes of regional imbalances in India? | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | a) Discuss the key features of the Indian economy during the colonial period.
b) Evaluate the impact of LPG (Liberalization, Privatization, Globalization) reforms in Indian economic growth.
c) How has the poverty scenario evolved in India post-reforms? | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | a) Explain the role and importance of economic planning in post-independent India.
b) What were the major reasons for the 1991 economic crisis in India?
c) Analyze the demographic dividend and its implications for India. | CO1 | (9) |
|----|--|-----|-----|

Module 2

- 11 a) Analyze the impact of the Green Revolution on Indian agriculture. CO2 (9)
 b) Discuss the role of the MSME sector in India's industrial development.
 c) Explain the growth of the services sector in the post-reform period.

OR

- 12 a) Describe the key policy measures under the "Make in India" initiative. CO2 (9)
 b) What are the major causes of agrarian distress in India?
 c) Examine the role of digital economy in India's development.

Module 3

- 13 a) Distinguish between direct and indirect taxes with examples. CO3 (9)
 b) Explain the major functions of the Reserve Bank of India.
 c) Discuss the significance and structure of the Goods and Services Tax (GST).

OR

- 14 a) Analyze the impact of India's trade policy reforms since 1991. CO3 (9)
 b) What are the key objectives of monetary policy in India?
 c) Discuss the importance of the FRBM Act in maintaining fiscal discipline.

Module 4

- 15 a) Explain the major causes of unemployment in India. CO4 (9)
 b) Evaluate India's role in international forums like G20 and BRICS.
 c) Discuss the challenges of urbanization in India.

OR

- 16 a) What are the major environmental issues confronting India today? CO4 (9)
 b) Outline the key features of the Ayushman Bharat scheme.
 c) Discuss the economic implications of India's demographic transition.

SEMESTER 4

IPR MANAGEMENT

Course Code	BBAET407	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:0:0:0	ESE Marks	60
Credits	2	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	AEC

Course Objectives:

1. To provide a comprehensive understanding of the concepts of Intellectual Property Rights (IPR).
2. To equip students with knowledge of different types of IPR, including patents, copyrights, trademarks, industrial designs, and geographical indications, along with their registration and protection processes.
3. To develop the ability to apply IPR laws and frameworks in real-world business scenarios, ensuring compliance and strategic use of intellectual property for competitive advantage.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Intellectual Property Rights: Introduction, Need for Intellectual Property Right (IPR), Genesis and Development of IPR in India and Abroad: TRIPS Agreement, Role of WIPO; Importance of Intellectual Property in Business, Kinds of Intellectual Property (Copyrights, Patents, Trademarks, Designs, Geographic Indication, Trade secret). Emerging Trends and Issues in IPR	9
2	Patents and Copy rights Patents: Meaning –Importance – Patentable and Non-Patentable Inventions. Patent Filing Process: National and International - Patent Cooperation Treaty	9

	(PCT) - Patent Licensing and Monetization - Patent Infringement and Remedies Copy rights: Definition, Basics of Copyright Protection, Types of Copy Right, Registration procedure, Copyright Infringement, Remedies - Importance of Copyrights in Media and Entertainment	
3	Trademarks and Industrial Design: Trademarks: Meaning, Need of Trademarks. Purpose and Functions of Trademarks, Kinds of Trademarks, Procedure for Trademark Registration, Role of Trademarks in Branding and Marketing. Industrial Design: Definition and Importance- Registration, Kinds of protection provided by Industrial Designs.	9
4	Trade Secret and Geographical Indications Trade Secrets What are Trade Secrets, How trade secrets are maintained in trade and business, trade secret litigation, examples of Trade Secrets Geographical Indications Concept and Definition, Significance of Geographical Indications (GI), Legal framework of GI - Examples of GIs in India.	9

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the fundamental principles and legal aspects of Intellectual Property Rights (IPR) at national and international levels.	K2
CO2	Apply appropriate procedures for protecting and registering various types of intellectual property including patents, copyrights, trademarks, and geographical indications.	K3
CO3	Analyse different types of IPR to identify their importance in business, branding and marketing.	K4
CO4	Analyse and assess the implications of intellectual property infringements and legal remedies to ensure business sustainability and innovation protection.	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

TEXT BOOKS				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Law Relating to Intellectual Property Rights	V. K. Ahuja	Lexis Nexis, New Delhi.	3e,2017
2	Intellectual Property Rights,	Simran R. Gurnani.	C. Jamnadas & Co.	2e 2017
3	WTO, TRIPS & Geographical Indications	Tapan Kumar Rout (Ed)	New Century Publications (2021	10e, 2022
4	Intellectual Property Rights: Protection and Management.	Nithyananda, K V.	Cengage Learning India Private Limited.	2019
5	Intellectual Property Rights.	Neeraj, P., and Khusdeep, D	PHI Learning Private Limited	2014

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: BBAET407
Course Name: IPR MANAGEMENT

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|---|-----|-----|
| 1 | What is the need for Intellectual Property Rights (IPR)? | CO1 | (3) |
| 2 | List and briefly explain the different kinds of Intellectual Property. | CO1 | (3) |
| 3 | Differentiate between patentable and non-patentable inventions. | CO2 | (3) |
| 4 | Briefly explain the importance of copyrights in media and entertainment | CO2 | (3) |
| 5 | In what ways do trademarks benefit businesses? | CO3 | (3) |
| 6 | Why is it necessary to register industrial designs? . | CO3 | (3) |
| 7 | How are trade secrets maintained in business? | CO4 | (3) |
| 8 | Give examples of Geographical Indications (GI) in India and explain their significance. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|---|-----|-----|
| 9 | Discuss the genesis and development of Intellectual Property Rights in India and abroad, highlighting the role of WIPO and the TRIPS Agreement. | CO1 | (9) |
|---|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | Explain the importance of Intellectual Property in business and the emerging trends and issues related to IPR. | CO1 | (9) |
|----|--|-----|-----|

Module 2

11 Explain the patent filing process at national and international levels, including the Patent Cooperation Treaty (PCT). CO2 (9)

OR

12 Discuss copyright infringement and the legal remedies available. Give examples from the media and entertainment industry CO2 (9)

Module 3

13 Analyse the purpose and functions of trademarks and their role in branding and marketing strategies. CO3 (9)

OR

14 Evaluate the kinds of protection provided by industrial designs and their impact on product differentiation

CO3 (9)

Module 4

15 Analyse how trade secrets are maintained in business and discuss the implications of trade secret litigation with relevant examples.

CO4 (9)

OR

16 Evaluate the legal framework of Geographical Indications in India and discuss its significance in protecting local products.

CO4 (9)

S3 MINOR

BBA (Hons.)

(Information Technology)
SEMESTER 3
PROGRAMMING IN PYTHON

Course Code	MNITT308	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mins.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives: This course helps the students to learn the fundamentals of coding in Python with a focus on practical business applications, read and write scripts as well as to communicate effectively with programmers while hiring, managing, or collaborating with them.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Basics of Computer Architecture: processor, Memory, Input& Output devices Application Software & System software: Compilers, interpreters, High level and low level languages Introduction to structured approach to programming, Flow chart Algorithms, Pseudo code (bubble sort, linear search - algorithms and pseudocode)	11
2	Getting started with Python programming – Interactive shell, IDLE, Jupiter Notebooks, Detecting and correcting syntax errors, How Python works, Basic coding skills - input/output operations, operators, assignment, and comments, Numeric data types and character sets, expressions.	11
3	Control statements – Iteration with for/while loop, Formatting text for output, Selection structure (if-else, switch- case), Conditional iteration with while, Testing control statements, Lazy evaluation. Strings and text files – Accessing characters, substrings, Data encryption, Strings and	11

	number system, String methods, Text files	
4	Lists - Basic list Operations and functions, List of lists, Slicing, Searching and sorting list, List comprehension. Work with tuples. Sets. Work with dates and times. – Using in-built functions. Concept of modularization, Importance of modules in python, importing modules, built in modules, basic functionalities of numpy, scipy, pyplot.	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Case Study/ Microproject/ Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand a computational problem and develop an algorithm/flowchart to find its solution	K2
CO2	Write, test and debug basic Python programs	K3
CO3	Illustrate uses of conditional statements and string handling in Python programs.	K3
CO4	Develop simple programs for creating lists and using modules	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Fundamentals of Python : First Programs	Kenneth A Lambert.,	Cengage Publishing	2 nd ed, 2016
2	Python Programming	Rupesh Nasre	AICTE	2022
3	Python Programming	Dr. Jisu Elsa Jacob, Bharath Viswam S	S.K. Kataria & Sons	2 nd Ed. 2024

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Algorithmic Thinking with Python	Ajeesh Ramanujan, Narasimhan T	Human Resource Development Center, APJ Abdul Kalam Technological University	2024
2	Python for Data Analysis	Wes McKinney	Shroff / O'Reilly Publishers	2 nd Ed. 2017
3	Python Programming	Michael Urban and Joel Murach	Shroff/Murach	2016
4	Learn Python 3 The Hard Way	Zed A Shaw	Addison-Wesley	2017
5	Python Programming for Absolute Beginners	Michel Dawson	Cengage Learning Publications	3 rd Ed. 2013

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNITT308
Course Name: PROGRAMMING IN PYTHON

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|---|-----|-----|
| 1 | Explain the difference between high-level and low-level languages in computer programming. Give examples of each. | CO1 | (3) |
| 2 | Explain the role of a compiler in the software development process. How does it differ from an interpreter? | CO1 | (3) |
| 3 | Illustrate format specifiers and escape sequences with examples. | CO2 | (3) |
| 4 | Explain the concept of scope and lifetime of variables in Python programming language, with a suitable example. | CO2 | (3) |
| 5 | Write a Python program using a 'while' loop to calculate the factorial of a number input by the user. | CO3 | (3) |
| 6 | Explain the concept of lazy evaluation in Python. Provide an example to illustrate its use. | CO3 | (3) |
| 7 | Given a list of integers, write a Python program to remove all duplicate elements and print the updated list. | CO4 | (3) |
| 8 | Design a Python program that takes a sentence as input, counts the frequency of each character, and prints the characters along with their frequencies. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | Describe the basic components of computer architecture including processor, memory, and I/O devices. Discuss how these components interact during program execution, using an example. | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 10 | Create a flowchart for a linear search algorithm. Explain how the linear search algorithm works and its best-case scenario. | CO1 | (9) |
|----|---|-----|-----|

Module 2

- | | | | |
|----|---|-----|-----|
| 11 | What are the possible errors in a Python program. Write a Python program to print the value of $2^{2n}+n+5$ for n provided by the user. | CO2 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 12 | Write a Python code to check whether a given year is a leap year or not [An year is a leap year if it's divisible by 4 but not divisible by 100 except for those divisible by 400]. | CO2 | (9) |
|----|---|-----|-----|

Module 3

- | | | | |
|----|--|-----|-----|
| 13 | Discuss the importance of testing control statements in programming. Provide examples of common testing techniques for control statements. | CO3 | (9) |
|----|--|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 14 | Write a Python code to determine whether the given string is a Palindrome or not using slicing. Do not use any string function. | CO3 | (9) |
|----|---|-----|-----|

Module 4

- | | | | |
|----|---|-----|-----|
| 15 | Write a Python code to create a function called list of frequency that takes a string and prints the letters in non-increasing order of the frequency of their occurrences. Use dictionaries. | CO4 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 16 | Write a Python program to read a list of numbers and sort the list in a non-decreasing order without using any built in functions. A separate function should be written to sort the list wherein the name of the list is passed as the parameter. | CO4 | (9) |
|----|--|-----|-----|

(Industrial Management)

SEMESTER 3

ADVANCED OPERATIONS RESEARCH

Course Code	MNIMT308	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mins.
Prerequisites (if any)	Nil	Course Type	PDC

Course Objectives:

1. To understand the fundamentals of operations research for developing problem-solving and analytical skills
2. To learn key OR techniques and tools to apply in strategic decision-making models for solving real-world business problems
3. To learn how to optimize the allocation of limited resources in manufacturing, services, and supply chain management to achieve business goals.
4. To understand how to evaluate the results of optimization models and determine the feasibility and effectiveness of different solutions.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Basics of Operations Research (OR): Introduction, Origin & Development of OR, Definition and Meaning of Operational Research, Scope of OR, Phases of OR, Models in OR, Classification of Models, Managerial Applications & Limitations of OR , OR and Decision Making, Major OR Techniques. Linear Programming Problems: Introduction, Formulation of LPP, Solution by Graphical Method, Theory of Simplex Method, Simplex Algorithm, Duality Concept & Sensitivity Analysis(<i>Theory Only</i>), Managerial Applications	12

2	Transportation Problems: Introduction, Mathematical Formulation, Initial Basic Feasible Solution by NWCR, LCM and VAM, Optimality Test by MODI method & Stepping Stone Method, Unbalanced Transportation Problems, Degeneracy in TP, Managerial Applications Assignment Problems: Introduction, Mathematical Formulation, Solution by Hungarian Method, Unbalanced Assignment Problems, Travelling Salesman Problem, Managerial Applications	12
3	Decision Models Introduction, Steps in DM, Different DM Environment (under Certainty, Uncertainty & Risk), Decision Tree Analysis, Managerial Applications Game Theory Introduction, Basic Terms, Types of Games, The Maximin-Minimax Principle, Games with Saddle points, Games without Saddle points, Graphical Method, Principle of Dominance, Managerial Applications	10
4	Network Scheduling by CPM & PERT Introduction of Network Theory, Basic Terms, Rules of Network Construction, Time Analysis (Forward & Backward Pass methods), Critical Path Method(CPM) , Program Evaluation and Review Techniques) Procedure, Concepts of Resource Scheduling & Allocation, Project Crashing), Time-Cost Optimization Algorithm	10

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	understand the evolution, scope and managerial applications of Operations Research in business and formulate linear programming models to solve industry problems.	K3
CO2	practise mathematical models to allocation problems through Transportation & Assignment problems and analyse business contexts	K3
CO3	develop decision making models for analysing business situations with resource constraints and competitive business environment for strategic decision making	K3
CO4	apply network analysis and to focus on the various types of scheduling problems and techniques that can be employed to solve concerned problems	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations Research	Pradeep Pai	Oxford HE Publishers	5e, 2020
2	Operations Research	S Kalavathy	Vikas Publications	5e, 2021
3	Introduction to Operations Research	Hillier, F S, et al.	Tata McGraw Hill,	10/e, 2017
4	Operations Research	Swarup K, et.al.	Sulthan Chand & Sons	16e, 2022
5	Operations Research: Theory and Applications	J.K Sharma	New Delhi: Laxmi Publications	6/e. 2018

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations Research: An Introduction	Hamdy A Taha	Prentice Hall, 2010.	11e, 2021
2	Operations Research	Mahajan M.	Dhanpat Rai & Co.	4/e, 2019
3	Operations Research	Prem kumar Gupta, Hira D.S,	S.Chand Publications	8e, 2022
4	Operations Research	Natrajan. A.M, et.al.	Pearson	4e, 2021

Video Links	
Serial No.	Link ID
1	https://www.youtube.com/watch?v=_zhtDJX3kOY
2	https://www.youtube.com/watch?v=xrGVe6gMRyk
3	https://www.youtube.com/watch?v=Q31jKiEXxdc
4	https://www.youtube.com/watch?v=BUGlhEecipE
5	https://www.youtube.com/watch?v=k4x6YMFq-aM
6	https://www.youtube.com/watch?v=E1jFY7uPg2U
7	https://onlinecourses.nptel.ac.in/noc22_ma48/preview
8	https://www.youtube.com/watch?v=aJKuM4U-eYg
9	https://www.youtube.com/watch?v=H58TPQNr2kM
10	https://www.youtube.com/watch?v=Tm2HhqMu5Jg

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNIMT308
Course Name: ADVANCED OPERATIONS RESEARCH

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

		Marks
1	Explain the different <i>models</i> in OR.	CO1 (3)
2	Write a short note on <i>Sensitivity Analysis</i> .	CO1 (3)
3	What are the key differences between <i>Transportation</i> and <i>Assignment problems</i> ?	CO2 (3)
4	What do you mean by ' <i>Degeneracy</i> ' in Transportation Problems?	CO2 (3)
5	Mention the role of <i>Decision Tree Analysis</i> in Decision Making process.	CO3 (3)
6	Explain <i>Principle of Dominance</i> .	CO3 (3)
7	Briefly describe <i>Project Crashing</i> .	CO4 (3)
8	List the major steps in <i>PERT</i> .	CO4 (3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | |
|---|--|---------|
| 9 | A small-time toy manufacturer manufactures two types of toys, Luna and Max. Both are processed in two machines A & B. Luna takes 2 hours in A and 1 hour in B, whereas Max takes 1 hour in A and 3 hours in B. 80 hours are available in A weekly and 90 hours are available in B weekly. The profit earned per Luna and Max are ₹ 10 and ₹ 15 respectively. Formulate the problem as an LPP and solve it. | CO1 (9) |
|---|--|---------|

OR

- | | | |
|----|---|---------|
| 10 | Solve the LPP using Simplex method
Maximize, $3x_1 + 2x_2$ | CO1 (9) |
|----|---|---------|

Subject to $x_1 - x_2 \leq 1$

$3x_1 - 2x_2 \leq 6$ and

$x_1 \geq 0, x_2 \geq 0$

Module 2

- 11 Find the Initial Basic Feasible Solution of the given TP using VAM.

CO2 (9)

		Destination				
Origin		D1	D2	D3	D4	Supply
	O1	11	13	17	14	250
	O2	16	18	14	10	300
	O3	21	24	13	10	400
	Demand	200	225	275	250	950

OR

- 12 An automobile dealer put 4 requirements to 4 different jobs, the requirements have somewhat different kinds of skills and they exhibit different levels of efficiency from one job to another. The dealer has estimated the number of man-hours that could be required for each job which is given in the matrix shown below.

CO2 (9)

Find the optimal assignments that will result in minimum man hours needed.

	J1	J2	J3	J4
M1	5	3	2	8
M2	7	9	2	6
M3	4	6	5	7
M4	5	7	7	8

Module 3

- 13 A Finance Manager is considering drilling a well. In the past, only 70% of wells drilled were successful at 20 metres depth in that area. Moreover, on not finding of water at 20 metres, some persons in that area drilled it further up to 25 metres but only 20% struck water at that level. The prevailing cost of drilling is Rs.500 per metre. The Finance Manager estimated that in case he does not get water in his own well, he will have to pay Rs.15,000 to buy water from outside for the same period of getting water from the well. The following decisions are considered: (i) Do not drill any well at all and buy water from outside; (ii) Drill up to 20 metres; and (iii) If no water is found at 20 metres, drill further up to 25 metres. Draw an appropriate decision tree and determine the Finance Manager's optimal strategy.

CO3 (9)

OR

14 Solve the game:

CO3 (9)

	Competitor <i>B</i>		
Competitor <i>A</i>	1	7	2
	6	2	7
	5	1	6

Module 4

15 A mini project has the following time schedule:

CO4 (9)

<i>Job</i>	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-10	9-10
<i>Required weeks</i>	4	1	1	1	6	5	4	8	1	2	5	7

Construct the network diagram

Find EST, LST, EFT and LFT values of all activities

Calculate Total Float and free floats of this project.

Find the Critical Path and the Project Length.

OR

16 The following table shows the jobs of a network along with their time estimates.

CO4 (9)

Job	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8
t_0	1	2	2	2	7	5	5	3	8
t_m	7	5	14	5	10	5	8	3	17
t_p	13	14	26	8	19	17	29	9	32

1) Draw the project network,

2) Find the project duration and

3) Calculate the probability of the project completing in 40 days.

(Financial Analytics)

SEMESTER 3

FINANCIAL TIME SERIES ANALYSIS

Course Code	MNFAT308	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PDC

Course Objectives

1. Develop skills to analyze financial time series data and apply linear and volatility models for forecasting and risk analysis.
2. Evaluate multivariate, nonlinear, and high-frequency financial models.
3. Emphasize the use of rigorous statistical methods to handle complex financial data.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Fundamentals of Financial Time Series: Overview of financial time series data: prices, returns, volatility, types of financial time series: discrete vs. continuous time, univariate vs. multivariate, statistical properties: stationarity, ergodicity, white noise, random walk, autocorrelation and partial autocorrelation functions (ACF/PACF), transformations: log returns, differencing, seasonality removal, concepts of linearity and time series decomposition, model identification: AIC, BIC, and other variants of information criteria	10
2	Linear Time Series Models: Autoregressive (AR), Moving Average (MA), and ARMA models, ARIMA models and the Box–Jenkins methodology, model estimation: Maximum Likelihood and Least Squares,	

	unit root testing: Dickey-Fuller and Augmented Dickey-Fuller tests, forecasting using ARIMA models, model diagnostics and residual analysis, application of ARIMA to financial return forecasting	12
3	Conditional Heteroscedasticity and Volatility Modelling: Volatility clustering and leptokurtosis in financial returns, ARCH and GARCH models: definitions and estimation, extensions: GARCH-M, EGARCH, TGARCH, model diagnostics and forecasting volatility, model comparison and selection, financial applications: Value at Risk (VaR), risk forecasting, limitations and empirical features of volatility models	10
4	Advanced Topics in Financial Time Series: Vector Autoregressive (VAR) models: structure, estimation, impulse response, Granger causality and cointegration in financial markets, introduction to multivariate GARCH models (e.g., BEKK, DCC), basics of high-frequency financial data and market microstructure effects, nonlinear time series models: TAR, SETAR, and smooth transition models, introduction to nonparametric methods: kernel regression, local linear regression, forecasting and model selection in complex environments	12

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Analyze the statistical properties of financial time series and apply transformations to prepare data for modeling, ensuring stationarity and suitability for subsequent analytical techniques	K4
CO2	Apply AR, MA, ARMA, and ARIMA models to financial data, and analyze residuals and forecasts to evaluate model adequacy and improve prediction accuracy	K4
CO3	Implement ARCH/GARCH models on return series, analyze volatility dynamics, and assess model fit to understand time-varying risk and financial market behavior.	K4
CO4	Analyze multivariate and nonlinear time series models, evaluate cointegration and causality, and apply high-frequency and nonparametric techniques to interpret complex financial relationships	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Analysis of Financial Time Series	<i>Ruey S. Tsay</i>	Wiley	3rd Edition, 2010
2	Applied Econometric Time Series	<i>Walter Enders</i>	Wiley	4th Edition, 2014

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Time Series Analysis and Its Applications: With R Examples	<i>Robert H. Shumway and David S. Stoffer</i>	Springer	4th Edition, 2017
2	Introductory Time Series with R	<i>Paul S.P. Cowpertwait and Andrew V. Metcalfe</i>	Springer	1st Edition, 2009
3	Financial Time Series: Modeling and Analysis	<i>Yue-Kuen Kwok</i>	Springer	1st Edition, 2008
4	Financial Econometrics: Problems, Models, and Methods	<i>Christian Gourieroux and Joann Jasiak</i>	Princeton University Press	1st Edition, 2001

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR
Course Code: MNFAT308
Course Name: FINANCIAL TIME SERIES ANALYSIS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	What is the difference between weak stationarity and strong stationarity in a time series? Explain with examples.	CO1	(3)
2	Discuss the significance of autocorrelation and partial autocorrelation functions in time series analysis. How are they used for model identification?	CO1	(3)
3	Explain the components of an ARIMA(p,d,q) model and the steps involved in fitting such a model to financial return data.	CO2	(3)
4	How does the Augmented Dickey-Fuller (ADF) test help in determining stationarity? What are its null and alternative hypotheses?	CO2	(3)
5	What is volatility clustering and how does it justify the use of GARCH models in financial time series?	CO3	(3)
6	Describe the structure of a GARCH(1,1) model. How are its parameters interpreted in terms of volatility persistence?	CO3	(3)
7	What is Granger causality and how can it be tested in the context of multivariate financial time series?	CO4	(3)
8	Briefly explain how threshold autoregressive (TAR) models differ from linear AR models. What type of behaviour do they capture?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | Illustrate and explain the process of time series decomposition. Discuss how trend, seasonality, and irregular components are extracted and interpreted in financial time series data. | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 10 | Evaluate the implications of using log-returns versus raw prices in financial time series analysis. Discuss statistical and economic reasoning with empirical considerations. | CO1 | (9) |
|----|---|-----|-----|

Module 2

- | | | | |
|----|---|-----|-----|
| 11 | Critically analyze the limitations of ARIMA models in capturing structural breaks or nonlinearity in financial data. Suggest how such issues can be identified and addressed. | CO2 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 12 | Explain the theoretical steps involved in fitting an ARIMA model to a financial time series. Discuss the role of pre-processing, model identification, estimation, diagnostic checking, and interpretation of results. | CO2 | (9) |
|----|--|-----|-----|

Module 3

- | | | | |
|----|---|-----|-----|
| 13 | Trace the historical development of volatility modeling in finance, starting from ARCH to advanced GARCH variants. Discuss their evolution and the econometric challenges they addressed. | CO3 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 14 | Explain the role of volatility models in the theoretical estimation of Value at Risk (VaR). Discuss key assumptions, methodological steps, and how model choice affects VaR outcomes. | CO3 | (9) |
|----|---|-----|-----|

Module 4

- | | | | |
|----|--|-----|-----|
| 15 | Examine the role of cointegration in modeling long-term equilibrium relationships in financial markets. Discuss Engle-Granger and Johansen approaches with financial examples. | CO4 | (9) |
|----|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 16 | Evaluate the impact of market microstructure noise in high-frequency financial data. Discuss how it affects modeling and inference, and methods to mitigate its influence. | CO4 | (9) |
|----|--|-----|-----|

(Mathematics)
SEMESTER 3
ADVANCED LINEAR ALGEBRA

Course Code	MNMAT308	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives:

1. Introduce vector spaces as a common framework to study linear operations on mathematical objects like n-tuples, polynomials, matrices, and functions.
2. Introduce core concepts such as basis, linear transformations, and operations within and between vector spaces.
3. Explain the use of inner products for approximations and orthogonal projections to solve mathematical problems more efficiently

Module No.	Syllabus Description	Contact Hours
1	Vector Spaces, Subspaces -Definition and Examples. Linear independence of vectors, Linear span, Bases and dimension, Co-ordinate representation of vectors. Row space, Column space and null space of a matrix	11
2	Linear transformations between vector spaces, matrix representation of linear transformation, change of basis, Properties of linear transformations, Range space and Kernel of Linear transformation, Inverse transformations, Rank Nullity theorem, isomorphism	11
3	Inner Product: Real and complex inner product spaces, properties of inner product, length and distance, Cauchy-Schwarz inequality, Orthogonality, Orthonormal basis, Gram Schmidt orthogonalization process. Orthogonal projection. Orthogonal subspaces, orthogonal	11

	compliment and direct sum representation.	
4	Eigen values, eigenvectors and eigen spaces of linear transformation and matrices, Properties of eigen values and eigen vectors, Diagonalization of matrices, orthogonal diagonalization of real symmetric matrices, representation of linear transformation by diagonal matrix, Power method for finding dominant eigen value.	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Identify many of familiar systems as vector spaces and operate with them using vector space tools such as basis and dimension.	K3
CO2	Understand linear transformations and manipulate them using their matrix representations.	K3
CO3	Understand the concept of real and complex inner product spaces and their applications in constructing approximations and orthogonal projections	K3
CO4	Compute eigen values and eigen vectors and use them to diagonalize matrices and simplify representation of linear transformations	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Linear Algebra-an introduction	Richard Bronson, Gabriel B. Costa	Academic press	2 nd ed, 2007
2	Elementary linear algebra: Applications version	Howard Anton, Chris Rorres	Wiley	11 th ed. 2013

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Linear Algebra and It's Applications	Gilbert Strang	Cengage Learning,	4 th ed 2006
2	Schaum's outline of linear algebra	Seymour Lipschutz, Marc Lipson	Mc Graw Hill Edn	3 rd ed. 2017

3	Introduction to Applied Linear Algebra: Vectors, Matrices, and Least Squares	Stephen Boyd, Lieven Vandenberghe	Cambridge University Press	2018
4	Linear Algebra with applications	W. Keith Nicholson	McGraw-Hill	4 th ed 2002

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNMAT308
Course Name: ADVANCED LINEAR ALGEBRA

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

- | | | | |
|---|--|-----|-----|
| 1 | Define a vector space and give two examples of vector spaces over the real numbers. | CO1 | (3) |
| 2 | State and prove the condition for a subset of a vector space to be a subspace. | CO1 | (3) |
| 3 | Define a linear transformation between vector spaces and explain the matrix representation of a linear transformation. | CO2 | (3) |
| 4 | State and prove the Rank-Nullity Theorem for a linear transformation $T: V \rightarrow W$ | CO2 | (3) |
| 5 | Define an inner product on a vector space. State and prove the Cauchy-Schwarz inequality. | CO3 | (3) |
| 6 | Explain the Gram-Schmidt orthogonalization process with a brief example. | CO3 | (3) |
| 7 | Define eigenvalues and eigenvectors of a matrix. How is a matrix diagonalized using its eigenvalues and eigenvectors? | CO4 | (3) |
| 8 | What is orthogonal diagonalization? State the conditions under which a real matrix is orthogonally diagonalizable. | CO4 | (3) |

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|---|-----|-----|
| 9 | Let S_1 and S_2 be two subspaces of a finite dimensional vector space. Prove that $S_1 \cap S_2$ is also a subspace. Is $S_1 \cup S_2$ s subspace. Justify your answer. | CO1 | (9) |
|---|---|-----|-----|

OR

- 10 Prove that the vectors $\{(1,1,2,4), (2, -1,5,2), (1, -1, -4,0), (2,1,1,6)\}$ are linearly independent CO1 (9)

Module 2

- 11 Show that the transformation $T: R^2 \rightarrow R^3$ defined by $T(x, y) = (x - y, x + y, y)$ is a linear transformation. CO2 (9)

OR

- 12 Prove that the mapping $\varphi: R^3 \rightarrow R^3$ defined by $T(x, y, z) = (x + y, y + z, z + x)$ is an isomorphism CO2 (9)

Module 3

- 13 Prove that the definition $f(u, v) = x_1y_1 - 2x_1y_2 + 5x_2y_2$ for $u = (x_1, y_1)$ and $v = (x_2, y_2)$ is an inner product in R^2 . CO3 (9)

OR

- 14 Prove the triangle inequality $\|u + v\| \leq \|u\| + \|v\|$ in any inner product space. CO3 (9)

Module 4

- 15 Consider the transformation $T: R^2 \rightarrow R^2$ defined by $(x, y) \mapsto (x - y, 2x - y)$. Is T diagonalizable. Give reasons. CO4 (9)

OR

- 16 Prove that a square matrix A is invertible if and only if all of its eigen values are non-zero. CO4 (9)

(Business Analytics)

SEMESTER 3

INTRODUCTION TO BUSINESS ANALYTICS AND DATA SCIENCE

Course Code	MNBAT308	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mns.
Prerequisites (if any)	Nil	Course Type	PDC

Course Objectives:

1. To familiarize students with the fundamental concepts and scope of Business Analytics and Data Science
2. To enable learners to understand the role of data in business decision-making.
3. To expose students to basic tools, techniques, and applications of analytics in solving real-world business problems.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Fundamentals of Business Analytics and Data Science Meaning and Importance of Business Analytics, Types of Analytics: Descriptive, Predictive, Prescriptive Introduction to Data Science: Definition, Importance, and Applications, Data-Driven Decision-Making in Business, Analytics vs. Data Science vs. Business Intelligence, Real-world applications across industries (retail, banking, healthcare, marketing)	10
2	Understanding Data and Data Preparation Types and Sources of Data: Structured, Unstructured, Semi-structured, Data Collection Methods: Surveys, Transactions, Social Media, Sensors, Data Cleaning and Preprocessing Basics	11

	Data Visualization: Charts, Graphs, and Dashboards (intro to tools like Excel/Google Sheets/Power BI/Tableau) Introduction to spreadsheets as an analytical tool: Sorting, Filtering, Pivot Tables	
3	Introduction to Analytical Techniques Descriptive Statistics: Mean, Median, Mode, Standard Deviation, Variance, Introduction to Correlation and Regression (basic conceptual level), Introduction to Probability and Distributions, Basics of Forecasting Techniques, Concept of Hypothesis Testing, Business case examples using basic analytics	12
4	Tools and Trends in Business Analytics and Data Science Overview of Common Tools: Excel, Power BI, Tableau, Python (conceptual), R (basic level), Introduction to AI, ML and Big Data (basic level) Ethical and Legal Issues in Data Handling, Trends in Business Analytics: Real-time Analytics, Cloud-based Analytics, Data Security, Mini Project/Case Study: Using data to solve a simple business problem	11

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
---------------	---------------	--------------

• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60
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Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the scope, types, and applications of Business Analytics and Data Science in business.	K2
CO2	Identify different types of data and apply data collection and preparation techniques.	K3
CO3	Apply basic analytical tools and statistical concepts to interpret business data.	K4
CO4	Explore the role of emerging trends and tools in analytics for effective business decision-making	K4

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Business Analytics	Evans, J. R	Pearson Education.	3rd Edition, 2019
2	Business Statistics and Analytics	Vohra N.D.	McGraw Hill	2020
3	Data Science for Business: What You Need to Know About Data Mining and Data-Analytic Thinking	Provost, F., & Fawcett, T.	O'Reilly Media.	2013

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Analytics in a Big Data World: The Essential Guide to Data Science and its Applications	Baesens, B.	Wiley	2014
2	An Introduction to Statistical Learning with Applications in R	James, G., Witten, D., Hastie, T., & Tibshirani, R.	Springer	2021
3	Foundations of Data Science.	Srinivasa, K. G.	Springer	2021

Video Links (NPTEL, SWAYAM...)	
Serial No.	Link ID
1	Microsoft Learn and Tableau Public Resources – For hands-on tools like Excel, Power BI, Tableau (Online Tutorials). https://learn.microsoft.com/en-us/training/powerplatform/power-bi
2	https://www.udemy.com/topic/tableau/?srsltid=AfmBOoofbJVK_gGR9haB5quXN2TeG-QDjOuoxcmS5IRdQTkxWK4d4VtY
3	https://www.udemy.com/course/microsoft-excel-2013-from-beginner-to-advanced-and-beyond/
4	https://www.udemy.com/tutorial/the-data-science-course-complete-data-science-bootcamp/business-analytics-data-analytics-and-data-science-an-introduction/
5	https://www.coursera.org/courses?query=business%20analytics
6	https://onlinecourses.nptel.ac.in/noc20_mg11/

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNBAT308
Course Name: INTRODUCTION TO BUSINESS ANALYTICS AND DATA SCIENCE

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	What is data-driven decision-making? Give an example.	CO1	(3)
2	Differentiate between Predictive and Prescriptive Analytics.	CO1	(3)
3	What are the key differences between structured and unstructured data?	CO2	(3)
4	Explain any two data collection methods used in business analytics.	CO2	(3)
5	How do you calculate mean and standard deviation from a dataset?	CO3	(3)
6	Explain the importance of hypothesis testing in business analytics.	CO3	(3)
7	Briefly describe the role of Python and R in Data Science.	CO4	(3)
8	What are the ethical concerns in handling business data?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain the types of analytics with examples. How are they useful in business decision-making?	CO1	(9)
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OR

10	Differentiate between Business Analytics, Data Science, and Business Intelligence with suitable examples.	CO1	(9)
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Module 2

11	Describe different types of data and demonstrate how spreadsheets can be used for data sorting and filtering.	CO2	(9)
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OR

- 12 Explain data cleaning and preprocessing steps. How can Power BI or Tableau be used for basic data visualization? CO2 (9)

Module 3

- 13 A retail store has weekly sales data. How would you apply descriptive statistics and forecasting techniques to support sales planning? CO3 (9)

OR

- 14 Explain how correlation and regression analysis can be used to identify and interpret relationships between two quantitative variables. Illustrate with an example. CO3 (9)

Module 4

- 15 Evaluate the impact of AI, ML, and Big Data on modern business analytics. CO4 (9)

OR

- 16 Discuss the recent trends and legal challenges in data security and real-time analytics. Give relevant examples. CO4 (9)

(Production Management)
SEMESTER 3
PRODUCTION PLANNING AND CONTROL

Course Code	MNPMT308	CIA Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PDC

Course Objectives:

1. To familiarize students with the fundamental concepts and functions of production planning and control in various types of manufacturing systems.
2. To enable learners to understand and apply basic tools related to forecasting, capacity planning, inventory management, scheduling, and quality control.
3. To provide a conceptual understanding of modern production practices such as Just-in-Time (JIT), ERP, Lean Manufacturing, and their role in efficient operations.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Basics of Production Planning and Forecasting Definition and Importance of Production Planning and Control (PPC), Objectives and Functions of PPC, Types of Production Systems: Job, Batch, Mass, Continuous, Organization of PPC Department Forecasting: Purpose and Applications in PPC Qualitative Methods: Expert Opinion, Sales Force, Market Surveys Quantitative Methods : Moving Average, Trend Analysis	11
2	Process Planning, Capacity planning and Inventory Management Process Design and Planning, Route Sheets and Bill of Materials Facility Layout – Basic Types Line Balancing: Meaning and Purpose	12

	Aggregate Planning: Introduction and Importance, Strategies: Level Strategy and Chase Strategy Inventory Management Functions and Types of Inventories, Introduction to EOQ, Inventory control techniques, Basics of Just-in-Time (JIT) and Kanban Systems Overview of ERP and MRP	
3	Scheduling, Routing, and Dispatching Scheduling: Meaning and Purpose, Forward and Backward Scheduling, Simple Scheduling Tools: Gantt Charts, Concept of Job Sequencing Routing and Dispatching: Meaning and Steps in Routing, Dispatching: Functions and Procedures, Role of Follow-up in Production Control	10
4	Quality Control, Maintenance, and Modern Trends in PPC Quality Management: Basic Concepts of Quality Control, Overview of TQM and Six Sigma Maintenance in Production: Types: Preventive and Breakdown, Importance of Maintenance in Operational Efficiency Emerging Trends in PPC: Role of Technology and Computers in PPC, Lean Manufacturing and Industry 4.0: Introduction and Examples	11

Course Assessment Method
(CIE: 40 Marks, ESE: 60 Marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment	Internal Examination-1 (Written)	Internal Examination- 2 (Written)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24 marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course, the students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the basic concepts, functions, and significance of production planning and control in various types of production systems.	K2
CO2	Apply forecasting, routing, scheduling, and inventory management techniques in simple production scenarios.	K3
CO3	Analyse the relevance of capacity planning, line balancing, and aggregate planning in improving production efficiency.	K4
CO4	Apply modern production tools like JIT, ERP, and Lean systems in enhancing operational effectiveness.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Fundamentals of Production Planning and Control	Stephen N. Chapman	Pearson	2007
2	Production Planning and Control	M. Mahajan	Dhanpat Rai & Co.	2018
3	Samuel Elion	Elements of Production Planning and Control	Universal Publishing Corporation	2015

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Modern Production & Operation Managements	E. S. Baffa and R. K. Sarin	Wiley India Pvt. Ltd.	8th edition
2	Manufacturing Planning and Control for Supply Chain Management,	Vollmann, T.E., W.L. Berry, D.C. Whybark, and F.R. Jacobs	Tata McGraw-Hill, New Delhi.	2012
3	Production Planning and Control	K.C. Jain and L. N. Agarwal	Khanna Publishers	8th edition
4	Production and Operations Management	S. N. Chary	McGraw Hill Latest Edition	2019

Video Links (NPTEL, SWAYAM...)	
Serial No.	Link ID
1	https://www.udemy.com/course/production-ppc
2	https://alison.com/course/production-planning-and-control-in-industrial-engineering

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNPMT308
Course Name: PRODUCTION PLANNING AND CONTROL

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Explain the objectives of production planning and control.	CO1	(3)
2	Differentiate between job and batch production systems.	CO1	(3)
3	What is a Bill of Materials (BOM)? Explain its role in process planning.	CO2	(3)
4	What is the Kanban system in inventory management?	CO2	(3)
5	What is the purpose of job sequencing in production scheduling?	CO3	(3)
6	Explain the purpose of Gantt charts in production scheduling.	CO3	(3)
7	What is JIT? How does it help in reducing inventory costs?	CO4	(3)
8	Compare ERP and MRP in terms of their role in modern production systems.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Discuss the importance and functions of Production Planning and Control in a manufacturing organization.	CO1	(9)
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OR

10	Explain various types of production systems with suitable examples.	CO1	(9)
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Module 2

11	Explain the concept of Economic Order Quantity (EOQ) and its significance in inventory management. Using hypothetical values, demonstrate how EOQ can be calculated and interpreted in a production setting.	CO2	(9)
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OR

- 12 What are the strategies used in aggregate production planning? Explain how each strategy works with examples. CO2 (9)

Module 3

- 13 Explain the concepts of forward and backward scheduling. How do they differ, and in what production scenarios is each method preferable? Illustrate your answer with examples. CO3 (9)

OR

- 14 Discuss the steps involved in routing and the functions of dispatching in production control. How do these activities contribute to efficient production flow and timely order fulfilment? CO3 (9)

Module 4

- 15 Discuss the contribution of Total Quality Management (TQM) and Six Sigma in enhancing product quality and operational effectiveness in production systems. CO4 (9)

OR

- 16 How do tools like ERP contribute to production planning and control? Discuss with examples. CO4 (9)

S4 MINOR
BBA (Hons.)

(Information Technology)
SEMESTER 4
INTERNET OF THINGS

Course Code	MNITT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mins.
Prerequisites (if any)	Nil	Course Type	PDC (Minor)

Course Objectives:

1. Helps students understand the fundamentals of IoT and its ecosystem, and analyze its impact on transforming industries and creating new business models.
2. Enables students to evaluate the risks, challenges, and opportunities associated with IoT.
3. Equips students to develop effective business strategies that incorporate IoT solutions.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to IoT: Definition, Evolution, and Importance - Components of IoT: Devices, Sensors, Networks, Platforms IoT Architecture: Perception, Network, and Application Layers - IoT Ecosystem and Stakeholders- Role of IoT in Digital Transformation - Use Cases of IoT in Business (Introductory level)	11
2	Application Domains: Retail, Manufacturing, Logistics, Healthcare, Smart Cities - Case Studies of IoT Implementation - IoT and Business Process Optimization - IoT in Customer Experience Enhancement - Emerging Trends: Smart Devices, Wearables, Connected Cars	11

3	IoT-Enabled Business Models: Subscription, As-a-Service, Data Monetization - Value Creation and Capture using IoT - IoT Data: Characteristics, Collection, and Management - Role of Big Data and Analytics in IoT - Cloud and Edge Computing for Business Decision-Making	11
4	IoT Security Issues: Device, Network, Data Threats - Privacy Concerns and Regulatory Compliance (e.g., GDPR) - Ethical Issues in IoT: Surveillance, Bias, Consent - IoT Governance and Risk Mitigation Strategies - Sustainability and Environmental Impact of IoT Deployments	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the basic concepts and architecture of the Internet of Things and its role in modern businesses.	K2
CO2	Discuss how IoT technologies drive business innovation and support various industry applications.	K2
CO3	Discuss IoT-driven business models, data strategies, and their implications on value creation.	K2
CO4	List the challenges, security risks, and ethical considerations in IoT deployment and management.	K2

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Internet of Things: A Hands-On Approach	Rajkumar Buyya, Amir Vahid Dastjerdi	Orient Blackswan Private Limited	1 st ed 2015
2	Internet of Things: Principles and Paradigms	Neeru Kapoor	Elsevier	1 st ed 2016
3	Internet of Things: A Hands-On Approach	Arshdeep Bahga, Vijay Madisetti	Efinito	1 st ed 2022

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Designing the Internet of Things	Adrian McEwen	Wiley	1 st ed 2015
2	Internet of Things: A to Z	Qusay F. Hassan	John Wiley & Sons	1 st ed 2018
3	Fog and Edge Computing: Principles and Paradigms	Rajkumar Buyya, Satish Narayana Srirama	Wiley	1 st ed 2018

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNITT408
Course Name: INTERNET OF THINGS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	Define the Internet of Things and mention any two key characteristics.	CO1	(3)
2	List and briefly explain the three layers of IoT architecture.	CO1	(3)
3	Mention three real-life applications of IoT in the retail industry.	CO2	(3)
4	How does IoT improve efficiency in supply chain management?	CO2	(3)
5	What is data monetization in IoT? Provide one example.	CO3	(3)
6	Name three IoT-enabled business models and briefly describe one.	CO3	(3)
7	List any three common IoT security threats.	CO4	(3)
8	Why is data privacy a concern in IoT-based systems?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|---|-----|-----|
| 9 | Explain the key components of an IoT system. How do these components work together to enable business applications? | CO1 | (9) |
|---|---|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | Discuss the evolution of IoT and its strategic importance in modern business environments. | CO1 | (9) |
|----|--|-----|-----|

Module 2

- 11 Analyze how IoT has transformed operations in any two industries of your choice with suitable examples CO2 (9)

OR

- 12 Explain the role of IoT in enhancing customer experiences with real-world use cases. CO2 (9)

Module 3

- 13 What are IoT-driven business models? Discuss how businesses generate value from IoT data. CO3 (9)

OR

- 14 Illustrate the role of cloud and edge computing in IoT data processing and decision-making.

CO3 (9)

Module 4

- 15 What are the major challenges and security risks associated with IoT? How can businesses mitigate these risks?

CO4 (9)

OR

- 16 Discuss the ethical and regulatory issues in IoT deployments with a focus on data privacy and sustainability.

CO4 (9)

(Industrial Management)
SEMESTER 4

WORK SYSTEMS ANALYSIS

Course Code	MNIMT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs 30 Mins.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives:

1. Provides a comprehensive understanding of work systems, including their functioning, evaluation, and improvement.
2. Trains students to identify inefficiencies by considering human and organizational behavior.
3. Teaches the application of system analysis tools to implement practical solutions in business environments.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Work Systems - Definition and Scope of Work Systems - Components of a Work System: People, Information, Technology - Types of Work Systems: Automated, Manual, Hybrid - Work Systems vs Business Processes - Socio-Technical Systems Perspective - Performance Measures in Work Systems - Role of Work Systems in Business Strategy - Life Cycle of Work Systems	11

2	Tools and Techniques for Work System Analysis - Flow Process Charts and Work Flow Diagrams - Time and Motion Study Techniques – Work Sampling - Value Stream Mapping - Root Cause Analysis (RCA) - Failure Mode and Effects Analysis (FMEA)-Process Mapping and Analysis. Use of Simulation in Work Systems	11
3	Human Factors and Ergonomics in Work Systems - Introduction to Human Factors Engineering - Ergonomics Principles in System Design - Work Design and Job Enrichment - Cognitive Load and Work Performance - Workplace Safety and Occupational Health - User-Centered Design Principles - Human Error and System Resilience - Impact of AI and Automation on Human Work	11
4	Work System Design and Improvement - Redesigning Work Systems: Objectives and Constraints - Lean Principles in Work System Design - Business Process Reengineering (BPR) - Continuous Improvement: Kaizen and Six Sigma - Sustainability in Work System Design - Role of Information Systems in Work Systems - Change Management in Work Systems	11

Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
• 2 Questions from each module. • Total of 8 Questions, each carrying 3 marks (8x3 = 24 marks)	• Each question carries 9 marks. • Two questions will be given from each module, out of which 1 question should be answered. • Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Discuss the principles and components of work systems in organizational settings.	K2
CO2	Explain various tools and techniques for analyzing and improving work processes.	K2
CO3	Comment on work system performance based on efficiency, productivity, and human factors	K2
CO4	Recommend improvements in work systems with a focus on sustainability and innovation	K2

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Work Systems: The Methods for Improving Business Performance	Steven Alter	Routledge	2 nd ed 2023
2	Methods, Standards, and Work Design	Niebel, Benjamin W. and Freivalds, Andris	McGraw-Hill Education	13 th ed 2022

3	Work Design: Occupational Ergonomics	Konz, Stephan A., and Johnson, Steven	Holcomb Hathaway	7 th ed 2020
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Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Work Systems and the Methods, Measurement, and Management of Work	Groover, Mikell P.	Pearson Education	2 nd ed 2021
2	A Guide to Human Factors and Ergonomics	Helander, Martin	CRC Press (Taylor & Francis)	3 rd ed 2021
3	Reengineering the Corporation: A Manifesto for Business Revolution	Hammer, Michael and Champy, James	Harper Business	2023 (revised ed.)

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA DEGREE EXAMINATION, MAY 2026

Course Code: MNIMT408

Course Name: WORK SYSTEMS ANALYSIS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

Marks

1	Define a work system. Briefly explain its key components.	CO1	(3)
2	Differentiate between a work system and a business process.	CO1	(3)
3	What is a time and motion study? State any two of its benefits.	CO2	(3)
4	Explain the purpose of a flow process chart.	CO2	(3)
5	Define ergonomics. How is it important in work system design?	CO3	(3)
6	What is job enrichment? How does it improve work effectiveness?	CO3	(3)
7	Mention any three principles of Lean Management.	CO4	(3)
8	What do you mean by continuous improvement? Give an example.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	Explain the components and life cycle of a work system with examples.	CO1	(9)
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OR

10	Discuss the socio-technical systems approach in analyzing work systems.	CO1	(9)
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Module 2

11	Describe the use and construction of value stream mapping. How does it help in improving processes?	CO2	(9)
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OR

12	What is work sampling? Explain the steps involved and its	CO2	(9)
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advantages.

Module 3

- | | | | |
|----|---|-----|-----|
| 13 | Explain the importance of human factors in system resilience and performance. | CO3 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 14 | Discuss workplace safety and how ergonomics can reduce occupational hazards | CO3 | (9) |
|----|---|-----|-----|

Module 4

- | | | | |
|----|---|-----|-----|
| 15 | What is Business Process Reengineering (BPR)? How can it transform an organization's work system? | CO4 | (9) |
|----|---|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 16 | Describe the role of information systems in designing efficient work systems. | CO4 | (9) |
|----|---|-----|-----|

(Financial Analytics)
SEMESTER 4

FINANCIAL REPORTING AND ANALYSIS

Course Code	MNFAT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs 30 Min.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives:

1. To enable students to interpret and analyse financial statements, including balance sheets, income statements, and cash flow statements, to assess an organization's financial health.
2. To equip students with tools such as ratio analysis, fund flow analysis, and financial forecasting to make informed business and investment decisions.
3. To provide an understanding of financial reporting standards, regulatory frameworks, and valuation techniques

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Introduction to Financial Reporting Concept and Purpose of Financial Reporting- Regulatory Framework in India: Companies Act, 2013-Overview of Accounting Standards in India (Ind AS)- Global Financial Reporting Standards (IFRS vs. Ind AS)-Recent Trends and Issues in Financial Reporting in India	11
2	Financial Statements and Their Components Balance Sheet: Structure and Components- Income Statement: Understanding Revenue and Expenses -Cash Flow Statement: Cash Flow from Operating, Investing, and Financing Activities (Theory only)	11

3	Analysis of Financial Statements- Fund flow statement Concept and Purpose of Fund Flow Statement- Understanding Working Capital Changes -Fund from operation- Sources and Applications of Funds - Analysing Fund Flow for Business Decision Making (Theory only) Ratio Analysis: Liquidity Ratios- Profitability Ratios- Solvency Ratios and Efficiency Ratios Common-Size Financial Statements-Trend Analysis and Comparative Analysis (Numerical Problems)-Limitations of Financial Statement Analysis	11
4	Valuation methods Financial Forecasting and Budgeting- Valuation of Firms Discounted Cash Flow (DCF) Model Price-to-Earnings (P/E) Ratio- Price-to-Book (P/B) Ratio- Dividend Discount Model (DDM)- Net Asset Value (NAV)- Economic Value Added (EVA)- Sum-of-the-Parts Valuation	11

Course Assessment Method
(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
●2 Questions from each module. ●Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	●Each question carries 9 marks. ●Two questions will be given from each module, out of which 1 question should be answered. ●Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Understand the purpose, framework, and evolving trends in financial reporting, including Indian Accounting Standards (Ind AS), Companies Act 2013, and IFRS.	K2
CO2	Interpret and analyze key components of financial statements such as the balance sheet, income statement, and cash flow statement for effective financial decision-making.	K2
CO3	Evaluate the financial health of a business using fund flow analysis, ratio analysis, common-size statements, and trend analysis techniques.	K5
CO4	Apply various valuation methods including DCF, P/E, P/B, DDM, and EVA for financial forecasting, budgeting, and firm valuation.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Financial Reporting and Analysis	Charles H. Gibson	Cengage Learning	13th Edition, 2020
2	Financial Statement Analysis and Security Valuation	Stephen H. Penman	McGraw-Hill Education	6th Edition, 2020
3	International Financial Reporting and Analysis	David Alexander and Ann Jorissen	Wiley	7th Edition, 2019

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year

1	Accounting for Management	M N Arora	Himalaya Publishing House	2019
2	Financial Accounting: A Managerial Perspective	R. Narayanaswamy	PHI Learning	7th Edition, published in 2022
3	Investment Analysis and Portfolio Management	Prasanna Chandra	McGraw Hill Education India	6th Edition (2021)
4	Corporate Finance	P. K. Jain	Tata McGraw Hill	7th Edition (2005)
5	Financial Reporting and Analysis	A. K. Mital	McGraw Hill	8th Edition (February 13, 2020)
6	Accounting for Managers	M. D. Bhattacharyya	Hall of India	3rd Revised Edition (June 30, 2006)
7	Financial Accounting	T.S. Grewal	Sultan Chand & Sons / S Chand Publications	2025
8	Financial Reporting	S.P. Jain and K.L. Narang	Kalyani Publishers	2 nd 2017

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNFAT408
Course Name: FINANCIAL REPORTING AND ANALYSIS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

1. Explain the primary objectives of financial reporting.
2. What is the difference between Ind AS and IFRS?
3. Define a balance sheet and list its key components.
4. What is the purpose of a fund flow statement?
5. Explain the significance of liquidity ratios in financial analysis.
6. How does trend analysis help in financial statement analysis?
7. What is the Discounted Cash Flow (DCF) model, and how is it used in valuation?
8. Discuss the limitations of financial statement analysis.

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9. Discuss the importance of financial reporting in business decision-making and the role of stakeholders in utilizing financial information.

OR

10. Explain the key provisions of the *Companies Act, 2013* related to financial reporting and provide an overview of *Ind AS* and its convergence with *IFRS*.

Module 2

11. Explain the structure and key components of a balance sheet and discuss the significance of assets, liabilities, and shareholders' equity in assessing a company's financial position.

OR

12. Explain how cash flows from operating, investing, and financing activities provide insights into a company's financial health.

Module 3

13. Explain the concept and purpose of a Fund Flow Statement. Discuss the importance of understanding working capital changes, fund from operations, and the sources and applications of funds

OR

14. Prepare a common size balance sheet from the following information:

Liabilities	2016	2017	Assets	2016	2017
Equity share capital	300000	400000	Goodwill	115000	90000
Redeemable pref. Capital	150000	100000	Land and Building	200000	170000
General reserve	40000	70000	Plant	80000	200000
Profit and loss account	30000	48000	Debtors	160000	200000
Proposed dividend	42000	50000	Stock	77000	109000
Creditors	55000	83000	Bills Receivable	20000	30000
Bills payable	20000	16000	Cash in hand	15000	10000
Provision for tax	40000	50000	Cash at bank	10000	8000
	677000	817000		677000	817000

Module 4

15. A company expects free cash flows of ₹20 lakh per year for the next 5 years and a terminal value of ₹100 lakh at the end of Year 5. If the discount rate is 10%, calculate the firm's value using the DCF model. Explain the importance of discounting in valuation.

OR

16. Given the following data for a firm: Net Operating Profit After Tax (NOPAT) = ₹150 lakh, Total Capital = ₹1200 lakh, and Cost of Capital = 12%. Calculate Economic Value Added (EVA). Discuss its interpretation in assessing firm performance.

(Mathematics)
SEMESTER 4
MATHEMATICAL OPTIMIZATION

Course Code	MNMAT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives:

1. Introduces basic optimization theory and methods applicable across all engineering disciplines.
2. Covers linear programming problems along with various solution methods and algorithms.
3. Includes transportation and assignment problems, solved using linear optimization techniques.
4. Applies network analysis for effective planning, scheduling, controlling, and monitoring of complex projects.

SYLLABUS

Module No.	Syllabus Description	Contact Hours
1	Linear Programming – 1 : Convex set and Linear Programming Problem – Mathematical Formulation of LPP, Basic feasible solutions, Graphical solution of LPP, Canonical form of LPP, Standard form of LPP, slack variables and Surplus variables, Simplex Method, Artificial variables in LPP, Big-M method.	11
2	Linear Programming – 2 :Two-phase method, Degeneracy and unbounded solutions of LPP, Duality of LPP, Solution of LPP using principle of duality, Dual Simplex Method.	11

3	Transportation and Assignment Problems: Transportation Problem, Balanced Transportation Problem, unbalanced Transportation problem. Finding basic feasible solutions – Northwest corner rule, least cost method, Vogel's approximation method. MODI method. Assignment problem, Formulation of assignment problem, Hungarian method for optimal solution, Solution of unbalanced problem. Travelling salesman problem	11
4	Sequencing and Scheduling : Introduction, Problem of Sequencing, the problem of n jobs and two machines, problem of m jobs and m machines, Scheduling Project management-Critical path method (CPM), Project evaluation and review technique (PERT), Optimum scheduling by CPM, Linear programming model for CPM and PERT.	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Formulate practical optimization problems as linear programming problems and solve them using graphical or simplex method	K3
CO2	Understand the concept of duality in linear programming and use it to solve suitable problems more efficiently .	K3
CO3	Identify transportation and assignment problems and solve them by applying the theory of linear optimization	K3
CO4	Solve sequencing and scheduling problems and gain proficiency in the management of complex projects involving numerous activities using appropriate techniques	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations Research	Kanti Swarup, P. K. Gupta, Man Mohan	Sultan Chand & Sons	2008
2	Operation Research	S.D Sharma	Kedar Nath and RamNath - Meerut	2008
3	Operations Research: Principles and Practice	Phillips, Solberg Ravindran	Wiley	2007

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Operations research	B. S. Goel, S. K. Mittal,	Pragati Prakashan	1980
2	Operations research : An introduction	H A Taha	Macmillon Publishing company	1976
3	Introduction to Operations Research	Frederick S Hillier, Gerald J. Lieberman	McGraw-Hill Higher Education	1967

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNMAT408
Course Name: MATHEMATICAL OPTIMIZATION

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	Define a convex set. Give one example and one non-example of a convex set in two dimensions.	CO1	(3)
2	What is the standard form of a Linear Programming Problem (LPP)? Convert the following LPP into standard form: Maximize $Z=3x+2y$, Subject to: $x+y\leq 4$, $x-y\geq 2$, $x, y\geq 0$	CO1	(3)
3	Explain the Two-Phase Method and its significance in solving LPPs.	CO2	(3)
4	Define the dual of an LPP. Write the dual of the following primal problem: Minimize $Z=5x_1+2x_2$, Subject to: $x_1+2x_2\geq 4$, $3x_1+x_2\geq 3$, $x_1, x_2\geq 0$	CO2	(3)
5	Explain the Vogel's Approximation Method for finding the initial basic feasible solution of a transportation problem.	CO3	(3)
6	Describe the Hungarian Method for solving an assignment problem. How is it modified for unbalanced problems?	CO3	(3)
7	Describe the steps involved in solving the sequencing problem of n jobs on 2 machines.	CO4	(3)
8	What is the Critical Path Method (CPM)? How does it help in scheduling and project management?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | Solve the LPP $Max\ 8x_1 + 9x_2$ subject to $2x_1 + 3x_2 \leq 50$, $3x_1 + x_2 \leq 3$, $x_1 + 3x_2 \leq 70$, $x_1, x_2 \geq 0$ by simplex method | CO1 | (9) |
|---|--|-----|-----|

OR

- 10 Solve the LPP $Max - x_1 + 3x_2$ subject to $x_1 + 2x_2 \geq 2$, $2x_1 + 6x_2 \leq 80$, $x_1 \leq 4$, $x_1, x_2 \geq 0$ by Big M method CO1 (9)

Module 2

- 11 Formulate the dual of the following problem and show that dual of the dual is the primal $Max 5x_1 + 6x_2$ subject to $x_1 + 9x_2 \geq 60$, $2x_1 + 3x_2 \leq 45$, $x_1, x_2 \geq 0$ CO2 (9)

OR

- 12 Use dual simplex method to solve $Min z = x_1 + 2x_2 + 4x_3$ subject to $2x_1 + 3x_2 - 5x_3 \leq 2$, $3x_1 - x_2 + 6x_3 \geq 1$, $x_1 + x_2 + x_3 \leq 3$, $x_1 \geq 0$, $x_2 \leq 0$, x_3 unrestricted CO2 (9)

Module 3

- 13 A company has factories A, B and C which supply warehouses at W1, W2 and W3. Weekly factory capacities are 200, 160 and 90 units respectively. Weekly warehouse requirements are 180, 120 and 150 respectively. Unit shipping cost in rupees is as follows. Determine the optimal distribution of this company to minimise the shipping cost CO3 (9)

16	20	12
14	8	16
26	24	16

OR

- 14 In a textile sales emporium, sales man A, B and C are available to handle W, X Y and Z. Each sales man can handle any counter. The service time in hours of each counter when manned by each sales man is as follows CO3 (9)

	A	B	C	D
W	41	72	39	52
X	22	29	49	65
Y	27	39	60	51
Z	45	50	48	52

Module 4

- 15 The following table gives the activities in a construction project and other relevant information. Find the free, total and independent float for each CO4 (9)

activity and determine the critical activities.

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Time duration	2	4	3	1	6	5	7

OR

16

For a project given below find (i) the expected time for each activity (ii) TE , TL values of all events (iii) the critical path.

Task	A	B	C	D	E	F	G	H	I	J	K
Least time	4	5	8	2	4	7	8	4	3	5	6
Greatest time	6	9	12	6	10	15	16	8	7	11	12
Most likely time	5	7	10	4	7	8	12	6	5	8	9

CO4 (9)

(Business analytics)

SEMESTER 4

FINANCIAL ANALYTICS

Course Code	MNBAT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Mins.
Prerequisites (if any)	None	Course Type	PDC (Minor)

Course Objectives:

1. Introduces core concepts of financial analytics by integrating financial theory with data-driven decision-making.
2. Equips students to analyze financial statements, perform ratio and trend analysis, and use Excel and analytics tools effectively.
3. Focuses on real-world applications with emphasis on Indian financial markets and firms.

Module No.	Syllabus Description	Contact Hours
1	Financial Statement Analysis - Introduction to Financial Analytics - Understanding Financial Statements (Balance Sheet, P&L, Cash Flow) - Ratio Analysis – Liquidity, Solvency, Profitability, and Efficiency - Common-Size and Trend Analysis - Case Study: Financial Statement Analysis of an Indian Company	11
2	Tools for Financial Analytics - Introduction to Spreadsheets for Financial Analytics - Financial Functions and Modeling in Spreadsheets - Time Value of Money, NPV, IRR - Budgeting and Forecasting Techniques - Case: Cash Budgeting and Working Capital Planning	11

3	Statistical Analysis in Finance - Descriptive Statistics & Visualization of Financial Data - Correlation, Regression & Time Series Analysis - Introduction to Risk Analysis & Scenario Modeling - Case: Portfolio Return Analysis and Market Risk Assessment	11
4	Data Visualization and Dashboards - Introduction to BI Tools (Power BI/Tableau etc.) in Finance - Creating Interactive Dashboards - Financial KPIs & Reporting Metrics – Case : Dashboard for Financial Performance Reporting	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Interpret financial statements and identify key financial ratios for evaluating business performance.	K2
CO2	Apply Spreadsheets-based tools to conduct financial analysis, forecasting, and budgeting.	K2
CO3	Analyze historical financial data using statistical techniques for investment and risk assessment.	K2
CO4	Apply data visualization and dashboarding tools in financial reporting and decision-making.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Financial Analytics: A Beginner's Guide	Ravi Sharma	Cengage Learning	1 st ed 2021
2	Financial Management: Analytical Approach	Prasanna Chandra	McGraw Hill Education	10 th ed 2019
3	Business Analytics	U Dinesh Kumar	Wiley India	2 nd ed 2021

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Financial Statement Analysis	K. R. Subramanyam	Tata McGraw Hill	11 th ed 2014
2	Data Science for Business	Foster Provost & Tom Fawcett	O'Reilly Media	1 st ed 2013
3	Financial Modeling	Simon Benninga	MIT Press	4 th ed 2014

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER BBA DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNBAT408
Course Name: FINANCIAL ANALYTICS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	Define liquidity ratios with examples.	CO1	(3)
2	What is common-size financial statement analysis?	CO1	(3)
3	Explain the use of Spreadsheets in preparing a cash flow forecast. .	CO2	(3)
4	What is the difference between NPV and IRR?	CO2	(3)
5	What is correlation in the context of financial data?	CO3	(3)
6	Explain any two types of financial risks.	CO3	(3)
7	List any three financial KPIs commonly used in dashboards.	CO4	(3)
8	What is the purpose of using Power BI or a similar tool in financial reporting?	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|---|-----|-----|
| 9 | Perform a detailed ratio analysis (Liquidity, Solvency, and Profitability) of a given company based on its balance sheet and income statement. Assume suitable figures. | CO1 | (9) |
|---|---|-----|-----|

OR

- | | | | |
|----|---|-----|-----|
| 10 | Explain the importance of trend analysis in financial decision-making. Illustrate with suitable examples. | CO1 | (9) |
|----|---|-----|-----|

Module 2

- 11 Explain how Spreadsheets can be used for financial modeling with examples such as break-even analysis and project evaluation. CO2 (9)

OR

- 12 Discuss budgeting and forecasting techniques using Spreadsheets. Illustrate with a sample sales or cash budget. CO2 (9)

Module 3

- 13 A company wants to understand the relationship between advertising expenditure and sales. Explain how regression analysis can help, and interpret a hypothetical regression output. CO3 (9)

OR

- 14 What is time series analysis? Discuss its application in forecasting stock prices or revenues with suitable examples.

CO3 (9)

Module 4

- 15 Explain the process of creating a financial performance dashboard using a tool of your choice. What key elements should be included?

CO4 (9)

OR

- 16 Design a simple dashboard outline to monitor key financial metrics of a manufacturing company. Discuss how it helps in decision-making.

CO4 (9)

(Production Management)

SEMESTER 4

PRODUCT DEVELOPMENT AND DESIGN

Course Code	MNPMT408	CIE Marks	40
Teaching Hours/Week (L: T:P: R)	3:1:0:0	ESE Marks	60
Credits	4	Exam Hours	2 Hrs. 30 Min.
Prerequisites (if any)	Nil	Course Type	PDC (Minor)

Course Objectives:

1. Offers in-depth knowledge of product design and development processes, strategies, and tools.
2. Emphasizes innovation and customer-centric approaches in product creation.
3. Focuses on practical business applications to align design with market needs.

Module No.	Syllabus Description	Contact Hours
1	Introduction to Product Development - Overview of Product Development – Definitions, Importance, and Trends - Types of Products – Consumer, Industrial, and Services - Stages of Product Development Lifecycle - Role of Innovation in Product Design - Product Development Strategies and Business Models - Cross-functional Teams in Product Development - Ethical and Legal Considerations in Design	11
2	Ideation and Concept Development - Customer-Centric Product Design - Identifying Market Needs – VOC (Voice of the Customer) - Brainstorming and Ideation Techniques (SCAMPER, Mind Mapping) - Concept Generation and Evaluation - QFD (Quality Function Deployment) and Kano Model - Concept Testing and Validation Techniques - Design Thinking Process - Use of Creativity Tools and Innovation Frameworks (TRIZ, Blue Ocean Strategy)	11

3	Design and Prototyping - Basics of Product Design – Form, Function, Aesthetics - CAD and Digital Tools for Product Design - Materials and Manufacturing Considerations - Cost Considerations in Product Design - Prototyping – Types and Importance - Rapid Prototyping Techniques - Testing and Validation of Prototypes	11
4	Commercialization and Lifecycle Management - Market Entry Strategies and Product Launch Planning - Branding, Positioning, and Communication Strategy - Product-Market Fit and Customer Adoption - Pricing Strategies for New Products - Product Lifecycle Management (PLM) - Post-Launch Feedback and Product Improvement - Managing Product Portfolio and Discontinuation - Legal Compliance, IPR, and Sustainability in Product Development	11

Course Assessment Method

(CIE: 40 marks, ESE: 60 marks)

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/Case Study/ Microproject/Lab Record*	Internal Examination-1 (Written)	Internal Examination- 2 (Written/Lab exam*)	Total
5	10	12.5	12.5	40

End Semester Examination Marks (ESE)

In Part A, all questions need to be answered and in Part B, each student can choose any one full question out of two questions

Part A	Part B	Total
2 Questions from each module. - Total of 8 Questions, each carrying 3 marks (8x3 =24marks)	- Each question carries 9 marks. - Two questions will be given from each module, out of which 1 question should be answered. - Each question can have a maximum of 3 sub divisions. (4x9 = 36 marks)	60

Course Outcomes (COs)

At the end of the course students should be able to:

Course Outcome		Bloom's Knowledge Level (KL)
CO1	Explain the core concepts and stages of product development and design	K2
CO2	Capture customer needs for translating them into product specifications.	K3
CO3	Explore tools and strategies for ideation, prototyping, and product evaluation.	K3
CO4	Examine product-market fit and implement strategies for successful product launch and lifecycle management.	K3

Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyse, K5- Evaluate, K6- Create

Text Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Product Design and Development	Karl T. Ulrich & Steven D. Eppinger	McGraw Hill Education	6 th ed 2020
2	Product Development: A Structured Approach to Design and Manufacture	Anil K. Mital, Anoop Desai, Anand Subramanian, Aashi Mital	Academic Press (Elsevier)	1 st ed 2014
3	Product Design and Development	Dinesh Khanduja	Satya Prakashan	3 rd ed 2022

Reference Books				
Sl. No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Product Design: Techniques in Reverse Engineering and New Product Development	Kevin Otto & Kristin Wood	Pearson Education	1 st ed 2001
2	The Case of the Bonsai Manager: Lessons for Managers on Intuition	R. Gopalakrishnan	Penguin Random House India	2 nd ed 2018
3	The Design of Everyday Things	Don Norman	Basic Books	2013 (revised and expanded edition)

MODEL QUESTION PAPER
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER BBA MINOR DEGREE EXAMINATION, MONTH AND YEAR

Course Code: MNPMT408
Course Name: PRODUCT DEVELOPMENT AND DESIGN

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

Answer all questions. Each question carries 3 marks

			Marks
1	Define product development and explain its significance in today's business environment	CO1	(3)
2	List any three types of products with suitable examples.	CO1	(3)
3	What is the role of Voice of the Customer (VOC) in product development?	CO2	(3)
4	Mention any three idea generation techniques used in concept development.	CO2	(3)
5	Differentiate between form and function in product design.	CO3	(3)
6	What is rapid prototyping? State any two of its advantages.	CO3	(3)
7	What do you understand by Product-Market Fit?	CO4	(3)
8	List any three strategies for successful product launch.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

- | | | | |
|---|--|-----|-----|
| 9 | Explain the stages of product development with the help of a flowchart and examples. | CO1 | (9) |
|---|--|-----|-----|

OR

- | | | | |
|----|--|-----|-----|
| 10 | Discuss the role of innovation and cross-functional teams in successful product development. | CO1 | (9) |
|----|--|-----|-----|

Module 2

11 Describe the process of Design Thinking. How does it help in generating and refining product ideas? CO2 (9)

OR

12 What is QFD? Explain how it translates customer needs into technical specifications. CO2 (9)

Module 3

13 Explain the importance of aesthetics and usability in product design with examples. CO3 (9)

OR

14 Discuss different types of prototypes. How do they contribute to the design validation process? CO3 (9)

Module 4

15 Outline the steps involved in planning a successful product launch. CO4 (9)

OR

16 What is Product Lifecycle Management (PLM)? Discuss its stages and strategic importance. CO4 (9)