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St Aloysius (Deemed to be University)

Mangaluru

SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

Note: Graph sheet will be provided.

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. SCM serves as a strategic process that bridges the gap between customer demand and available supply through coordination and integration. Illustrate.
2. Discuss in detail the factors influencing a decision on planning optimum numbers of warehouses.
3. Illustrate the concept 'square root law of inventory'. An organization currently holds an inventory of 8,000 units distributed across 4 warehouses. The company plans to expand its network by adding 3 additional warehouses in the coming months. Compute the future inventory level for the organization after the expansion.
4. Differentiate between channel length and channel breadth.
5. The dividing line between 3PL & 4PL is very thin. Justify.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. "Logistic functions involve the management of various processes such as transportation, warehousing, inventory control, and distribution to ensure the efficient flow of goods from production to consumption." – Elaborate.
7. The following table provides the coordinates and monthly demand for four retail outlets that need to be served by a new distribution center:

Location	Coordinates	Monthly Demand (units)
Pune	(30,70)	700
Mumbai	(90,80)	1600
Nashik	(60,40)	1200
Nagpur	(50,60)	1000

   a. Using the Centre of Gravity method, compute the ideal location for the distribution center and illustrate it on a coordinate graph.

   b. If demand from Mumbai increases by 25% and demand from Nashik decreases by 20%, evaluate how the new demand levels will shift the computed coordinates of the distribution centre.

Contd...2

8. Classic Furniture currently orders 600 units of a raw material at a time, which covers a two-month supply. The unit cost is ₹10, the ordering cost is ₹20 per order, and the carrying cost is 8% of the unit price per year.
   a. Calculate the Economic Order Quantity (EOQ).
   b. Determine the total annual inventory cost for both the current order quantity and EOQ.
9. "Routing and scheduling in transportation are critical functions from the perspective of logistics department" – Elaborate.
10. Analyze the extent to which outsourcing logistics enhances organizational competitiveness.

SECTION – C

11. **Case study:** **(1x12=12)**

Using Vogel's approximation method, compute the transportation cost to obtain the basic feasible solution of a transportation problem whose cost and requirement table is given below:

Origin/ Destination	D1	D2	D3	**Supply**
O1	5	1	7	**10**
O2	6	4	6	**80**
O3	3	2	5	**50**
Demand	**75**	**20**	**50**	

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A - Semester III – P.G Examination

November – 2025

SALES AND DISTRIBUTION MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Analyze why adaptability is vital for sales managers in dynamic markets.
2. A sales manager at Havells India finds that some territories consistently underperform despite high potential. How can quota revision and territory redesign be used to improve performance?
3. "Voltas Ltd." wants to reduce sales cost by modifying commission percentages. How can management ensure cost control without demotivating the sales team?
4. Fab India wants to enhance customer experience by aligning distribution to customer preferences. How can Fab India design a customer-oriented channel structure?
5. Amul manages milk collection, processing, and distribution efficiently through its cooperative model. Identify the key components of Amul's supply chain and explain how their integration ensures product freshness.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. A newly promoted sales manager struggles with time management between coaching the sales team and meeting targets. Apply sales manager skill sets to suggest an action plan.
7. Reliance Retail is facing challenges in supervising its large field sales team spread across India. The sales manager in Mumbai handles 15 territory executives, resulting in declining responsiveness. Analyze the factors affecting the span of control and recommend the most appropriate span for Reliance Retail's field sales organization.
8. "ITC Foods" plans to launch a digital training platform for field sales representatives. Design a training framework for ITC Foods.
9. Godrej Consumer Products aims to increase rural penetration. Suggest an appropriate channel structure for rural India.
10. Ingram Micro operates as a technology distributor managing supply, warranty, and dealer networks for brands like HP and Lenovo. Evaluate how wholesalers add value in technology distribution.

Contd...2

SECTION – C

11. **Case study:** **(1x12=12)**

Hindustan Unilever Limited (HUL) has long been a pioneer in the Indian FMCG industry. Over the years, it shifted its selling approach from transactional selling to relationship-based selling, recognizing that building long-term connections with customers and distributors creates higher lifetime value. In 2001, HUL launched Project Shakti, a rural distribution initiative empowering women micro-entrepreneur ("Shakti Ammas") to sell HUL products in villages. Rather than just focusing on pushing volumes, the company invested in trust-building, training, and education to help these women become effective local sales representatives. HUL's relationship selling approach emphasized understanding the customers' needs, educating them about product benefits, and creating emotional connections with the brand. The initiative helped HUL expand its reach to over 160,000 villages, with over 1,50,000 women entrepreneurs generating sustainable livelihoods. Today, HUL continues to use data-driven relationship management and digital training platforms for sales engagement, balancing empathy with efficiency in both urban and rural markets.

Questions:

a. Apply the concept of relationship selling to explain how Project Shakti transformed HUL's rural sales mode.

b. Analyze how shifting from transactional to relationship selling improved customer satisfaction and sales performance for HUL.

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

QUANTITATIVE MARKET ANALYSIS

Time: 2½ hrs.

Max Marks: 60

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Elaborate the different types of three candlestick patterns in technical analysis.

2. Calculate 5 day VMA for Day 5,6 & 7

Day	Volume
1	18500
2	19000
3	20500
4	21500
5	22500
6	25500
7	27500

3. Illustrate how Bollinger Bands measure volatility and help in identifying breakout zones.

4. Apply the concept of Gann angles to determine market support zones.

5. Explain the heads and shoulders pattern with a help of a diagram.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Critically evaluate whether technical analysis alone is sufficient for long-term investment decisions.

7. A trader is analyzing the trading volume of a stock to identify momentum. The trader calculates:
   - A **short-term 5-day Volume Moving Average (VMA_5)**
   - A **long-term 10-day Volume Moving Average (VMA_{10})**

Day	Volume	Day	Volume
1	12,000	6	16,200
2	13,000	7	17,500
3	14,800	8	18,300
4	13,800	9	16,800
5	15,000	10	17,200

   a. Calculate the 5-day VMA for Day 10

   b. Calculate the 10-day VMA for Day 10

   c. Compute the **Volume Oscillator**

Contd...2

8. Calculate William% R and Stochastic Oscillator %K for the below.Also calculate the 3 day moving average for % K.

Day	Close	High	Low
1	102	104	100
2	103	105.5	101.75
3	102	104.2	101.3
4	105	106.5	101.5
5	110	115	107
6	112	114.5	109.8
7	114	117.25	108.4
8	118	121	117
9	109	112.5	106.4
10	117	119.5	115.5
11	119	123	116
12	123	126	121
13	121	123.5	119.6
14	119	121.4	117.4

9. Evaluate the importance of combining sentiment indicators with technical tools for accurate forecasting.
10. Evaluate the Cup and Handle pattern's effectiveness in different time frames.

SECTION – C

11. **Case study:** **(1x12=12)**

Calculate MACD from Day 26-31

Day	Closing Prices	Day	Closing Prices	Day	Closing Prices
1	12345	13	12623	25	12645
2	12435	14	12635	26	12675
3	12456	15	12647	27	12705
4	12476	16	12666	28	12734
5	12547	17	12676	29	12755
6	12565	18	12698	30	12705
7	12788	19	12723	31	12830
8	12676	20	12734	32	12808
9	12755	21	12675	33	12788
10	12680	22	12655	34	12745
11	12573	23	12565	35	12724
12	12608	24	12604	36	12720

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

CREATIVITY AND INNOVATION MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Creative destruction is a necessary evil. Examine this statement with the help of suitable examples.
2. Evaluate the different levels of imagination.
3. Evaluate in detail, the various aspects of disruptive innovation.
4. Cannibalisation is a strategic move against competitors. Justify this argument.
5. Evaluate design thinking as an effective weapon to develop relevant innovations. Assess this statement.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Evaluate in detail, how does circular economy contribute to sustainable development?
7. Identify any product of your choice and provide evidence to prove it as beautiful explaining the various elements of beaty.
8. Incremental innovations and Breakthrough innovations can equip the industry to respond to customer needs in a better way. Evaluate this statement.
9. Identify the different elements of Henderson-Clark model.
10. Evaluate catalytic innovation and frugal innovation as an effective tool of social innovation.

SECTION – C

11. **Case study:** **(1x12=12)**

Innovation AT Tesla

The Innovative Strategies

The electric car-making firm, Tesla, has focused its business strategy on Innovation from day one, with its CEO and Founder Elon Musk who is often seen as visionary, wild, and revolutionary. Innovativeness is the tendency to pursue creativity and experimentation. Some innovations build on existing skills to create incremental improvements, while more radical innovations require brand-new skills and may make existing skills obsolete.

Contd...2

Tesla has used all four types of strategies (Incremental, Disruptive, Architectural, and Radical) in order to become the leader of electric car manufacturing (in quantity sold and in profit).

Tesla, whose statement is to "create the most compelling car company of the 21st century by driving the world's transition to electric vehicles", showed innovation by bucking the trend. Rather than offering a low operating cost MVP (Minimal Viable Product) or a "freemium" scheme where the competitive advantage is made available to the customer for free (or at a very low price) but followed with paid upgrades, Tesla preferred to not focus on the lower-end customers. Instead, Tesla created the most luxurious, expensive, fully-featured sports car they could afford. That car was the Tesla Roadster.

Tesla's Strategic Moves

Much of Tesla's business strategy was actually forced upon it. There was no way they could have created a cost-effective mass-market electric car. As a startup, they did not have the resources or capabilities to reap the benefits of economies of scale. Because they were creating such a unique car, they could not rely on outsourcing or on suppliers to gain mass-production benefits. Tesla's Supply Chain Strategy has probably been the most powerful move they operated. They knew early on that batteries would present the biggest technological hurdle to their cars. And so, they took complete control of their supply chain by investing in battery manufacturing. They also innovated in terms of marketing strategy. Elon Musk is the face of Tesla; he is divisive and wildly ambitious. They managed to attract a vast amount of investment thanks to his image. Volkswagen, Ferrari, or Mercedes do not have faces to rely on. Tesla studied and adapted to the industry and business environment in which it would operate. They knew their strengths, understood their market position, and built their strategy around their own findings instead of following conventional wisdom.

Market Analysis

Generally, the car-making industry is a difficult one to enter as a competitor. Yet, that did not discourage Tesla. It had to differentiate itself from huge companies such as Volkswagen, Mercedes, Audi, Porsche, and Ferrari. The advantage lies in Tesla's electric battery and the AI-driven technology it uses.Tesla could not sell its expensive, technologically advanced car to low-end customers. Tesla's segmentation approach includes behavioral and psychographic segmentation. It is aimed at dedicated and aspiring middle and upper-class customers who want and are looking for prestige, the appearance of being environmentally friendly, and the long-term cost-effectiveness of automobiles. A well-defined niche, indeed!

A PESTLE analysis shows that the company is secure thanks to governments' efforts to boost electric cars through tax credits (political). The global

Contd...3

economy benefits from an increase in demand for electric cars; however, the global economy is "flimsy", which could be at the expense of Tesla. A difficult economic conjuncture often means a decrease in the sales of higher-end cars. In addition, the minds of people (social) are increasingly accustomed to luxury electric cars. Electric cars are the future, but the technology still needs more advances because producing batteries uses a lot of materials that take a lot of energy to extract and transform. Finally, as Tesla expands globally, they need to update its policies and abide by local regulations, which are constantly evolving.

Potential Cooperative & Competitive Moves

Going beyond competition, there are three main Cooperative moves a company can make to boost its profit:(1) Joint Ventures,(2) Strategic Alliances, and (3) Mergers and Acquisitions. There are also other forms of growth strategies:(1) Co-locations- where companies will geographically cluster and(2) Co-opetition(Cooperative competition), in which two companies may join forces in a specific domain (e.g. R&D) but remain competitors on all other levels,

Considering the above PESTLE analysis, we can assume that TESLA would benefit from Alliances and Joint Ventures. In the same way that Apple orders some of its microprocessors from Samsung, Tesla could opt for Co-opetition with other car makers and supply its advanced electric batteries to Toyota or Daimler-Benz. This could actuality speed up the process of CO2 reduction on a global scale. Moreover, through an effort in Co-location, Tesla would benefit from serving as a catalyst and positive example to other automakers, demonstrating that there is consumer demand for vehicles that have good performance as well as efficiency.

Questions.

1. Examine the various strategies adopted by Tesla to remain competitive. (6 Marks)

2. Identify any two strategies of Tesla, that you like the most. Justify your choice.(6 Marks)

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

FINANCIAL MODELING

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. A firm invests ₹420,000 in a machine. It will produce cash inflows of ₹70,000 in Year 1, ₹105,000 in Year 2, ₹125,000 in Year 3, ₹75,000 in Year 4, and ₹85,000 in Year 5. The discount rate is 9% p.a..
   Find the NPV.
2. Risk-free rate is 9%, market return is 14%, and beta of the stock is 1.0. Calculate the cost of equity. Also Interpret what happens to the cost of equity if beta go to 1.4, 1.6 & 2.2 and market return changes to 18%, 16% & 20% respectively.
3. Explain the rationale behind using a Two-Stage Dividend Growth Model compared to a simple constant growth model.
4. A company purchases a machine for $240,000 with 20% WDV depreciation and expects annual operating profits before depreciation and tax of $35,000 for the next 4 years. The tax rate is 30%. Calculate the depreciation and operating cashflows.
5. The Abnormal returns (AR) are given in the table below for a hypothetical company calculated for an event. You are required to calculate the cumulative abnormal returns (CAR). Further, determine whether the abnormal returns were statistically significant by calculating t-statistics. Use the standard error value of 1.84 for the calculations.

Days	AR
-5	0.005
-4	0.109
-3	0.098
-2	0.15
-1	0.071
0	0.03
1	0.117
2	-0.071
3	0.064
4	-0.087
5	-0.167

Contd...2

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. A business is considering three new ventures. The expected cash flows are:

Year	Project X (₹)	Project Y (₹)	Project Z (₹)
0	(1,000,000)	(1,200,000)	(900,000)
1	300,000	200,000	400,000
2	400,000	400,000	300,000
3	500,000	600,000	250,000
4	600,000	700,000	450,000

Requirement:

1. Compute the IRR for each project.
2. Rank the projects according to their IRR.
3. If the cost of capital is 10%, which project(s) should be accepted?

7. A Company is considering the possibility of raising Rs. 100 Million by issuing debt, preference capital and equity and retained earnings. The book value and market value of the issues are as follows,

	Book Value	Market Value
Ordinary Shares	30	60
Reserves	10	-
Preference Shares	20	24
Debt	40	36
Total	**100**	**120**

The following cost are expected to be associated with the above-mentioned issues of capital. Assume 35% tax rate.

i. The firm can sell a 20 year Rs. 1000 face value debenture with a 16% rate of interest. An underwriting fee of 2% of the market price would be incurred to the issue of debentures.

ii. The 11% Rs. 100 face value preference issue fetch Rs. 120 per share. However, the firm will have to pay Rs. 7.25 per preference share as underwriting commission.

iii. The firm's ordinary share is currently selling for 150. It is expected that the firm will pay a dividend of Rs. 12 per share at the end of the next year, which is expected to grow at a rate of 7%. The new ordinary shares can be sold at a price of Rs. 145. The firm should also incur Rs. 5 per share flotation cost.

Compute the WACC using (i) Book Value Weights (ii) Market Value Weights

8. A hotel chain, Grand Palace Hotels, is preparing its next year's financial estimates using BEM. The company projects revenue of ₹50,000,000 and has planned the following allocations:

- 16% for marketing expenses
- 20% for operating expenses
- 9% for taxes

Additional budgeted expenses include:

- Salaries & Wages: ₹6,000,000

Contd...3

- Maintenance Costs: ₹1,200,000
- Security Expenses: ₹200,000
- Utilities: ₹750,000

Calculate the budgeted expenses for marketing, operations, taxes, and net profit using BEM.

9. Omega Foods Ltd. reported Net Income of ₹1,000 million for FY 2025. The depreciation expense recorded was ₹200 million. The balance sheet shows that Net Fixed Assets increased from ₹3,000 million to ₹3,500 million over the year, with depreciation of ₹200 million.
For working capital, Current Assets rose from ₹1,800 million to ₹2,200 million, while Current Liabilities increased from ₹1,400 million to ₹1,600 million. The company issued ₹250 million in new debt and repaid ₹100 million of its existing loans.
Calculate Free Cash Flow to Equity (FCFE)

10. The actual returns and expected returns of a company is given in the below table for an event window of eleven days. You are required to calculate the Abnormal returns for the same event window. Further, calculate the t-statistics and determine the event significantly impacted the stock prices. (Use standard error value of 1.84).(Alpha is -0.04 & Beta is 1.1)

Days	Actual Returns	Market Returns
-5	0.151	-0.099
-4	-0.719	-1.133
-3	1.133	-1.024
-2	-0.4	-1.535
-1	-0.331	-0.755
0	-0.107	-0.342
1	-2.848	-1.205
2	1.828	0.666
3	-1.17	-0.681
4	0.826	0.824
5	1.853	1.613

SECTION – C

11. **Case study:** **(1x12=12)**

XYZ Electronics is a hypothetical company in the consumer electronics industry. The company is planning for the next fiscal year. Use the information to prepare a pro-forma income statement for XYZ Electronics for the year ending December 31, 20X2.

Particulars	20X0	20X1
Revenue from operation	1200	1380
Other income	8	10
Total revenues	1208	1390
Expenses		
Material expenses	547	590
Employee benefit expenses	274	295
Finance cost	60	65

Contd...4

Depreciation and amortization expenses	75	80
Other expenses	98	123
Total expenses	1054	1153
Profit before exceptional items and other income	154	237
Exceptional items	30	35
Profit before extraordinary items and tax	184	272
Extraordinary items	NIL	NIL
Profit before tax	184	272
Tax expenses	82	126
Profit or loss for the period	102	146
Dividends	60	63
Retained earnings	42	36

Use percentage of sales method for the income statement items. The projected sales for the next year is Rs.1420

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

TALENT MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Discuss the phrase -'the war of talent'
2. Elaborate on the reasons for using metrics for talent management.
3. Elaborate the four main types of talent acquisition strategy.
4. Discuss the key reasons for organisations to build talent pipeline.
5. Discuss the significance of employee retention.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Explain the concept of talent management and analyse the key drivers for the implementation of talent management strategies in an organisation.
7. Discuss the need for talent segmentation and explain the various ways in which talents can be segmented.
8. Briefly discuss talent acquisition metrics.
9. Potential identification is crucial for a firm- Comment. Elaborate the various methods to identify the high potentials in a firm.
10. Discuss the measures that a company should take to align its talent strategy with its business strategy by giving an example.

SECTION – C

11. **Case study:** **(1x12=12)**

A global technology firm has introduced its operations last three years back. It is currently expanding its operations in new markets. The company is faced with the challenge of acquiring top talent in various regions while maintaining a cohesive organizational culture. They are about to hire 5,000 employees across the globe. The organisation has decided to invest highly in branding.

Questions:

1. Develop a strategic talent acquisition plan that aligns with the company's global expansion goals.

2. What are the EVP strategies that you would suggest that would support employer branding.

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any <u>FOUR</u> of the following. **(4x4=16)**

1. Explain the meaning of investment. How do you distinguish investment from speculation and gambling?

2. During the past 5 years, the returns of a stock were as follows:

Year	Return (%)
2020	21
2021	9
2022	-27
2023	18
2024	30

Compute the variance and standard deviation.

3. Apply the concept of oscillators by selecting any one type and analyse its interpretation in market forecasting.

4. A portfolio is constituted with four securities having the following characteristics:

Security	Return (%)	Proportion of investment
P	17.5	0.15
Q	24.8	0.25
R	15.7	0.45
S	21.3	0.15

Calculate the expected return of the portfolio.

5. An investor owns a portfolio that over the last five years has produced 18% annual return. During that time the portfolio produced a 1.30 beta. Further, the risk-free return and the market return averaged 7% and 16% per year respectively. How would you evaluate the performance of the portfolio?

SECTION - B

Answer any <u>FOUR</u> of the following. **(4x8=32)**

6. A bond with face value of Rs.1200, 10% coupon rate is redeemable after 6 years from now at a premium of 10%. The interest rate prevailing in the market is 12%. Calculate the bond duration.

7. Explain the barometric or indicator approach to economic forecasting.

8. Monthly return data (in %) are presented below for ITC stock and BSE National Index for a 12 month period.

Month	ITC	BSE National Index
1	9.43	7.41
2	0	-5.33
3	-4.31	-7.35
4	-18.92	-14.64
5	-6.67	1.58
6	26.57	15.19
7	20	5.11
8	2.93	0.76
9	5.25	-0.97
10	21.45	10.44
11	23.13	17.47
12	32.83	20.15

Calculate beta of ITC stock.

9. The data for four stocks are given. The data are the result of correlating returns on these stocks with the returns on the market index.

Stock	Alpha (αi)	Beta (βi)	Residual Variance ($\sigma^2 ei$)
A	1.50	1.25	24
B	-2.10	0.40	47
C	0.70	1.60	36
D	1.85	0.85	35

The market index is expected to have a return of 16% and a variance of return of 35%. Which single stock would an investor prefer to own from risk-return perspective?

10. Calculate the net selectivity measure for the platinum fund using Fama's framework of perormance components, assuming the risk free return as 5%.

Fund	Return (%)	Standard Deviation (%)	Beta
Platinum	16	35	1.33
Market Index	10	24	1.0

Use the following information:

R_p	= 16%	σ_p	= 35%
R_m	= 10%	σ_m	= 24%
R_f	= 5%	β_p	= 1.33

SECTION – C

11. **Case study:** **(1x12=12)**

An investor recently purchased a bond with Rs.2500 face value, 10% coupon rate and 10 years to maturity. The bond makes annual interest payments. The investor paid Rs.2550 for the bond. Calculate i. Current Yield ii. YTM of the bond iii. If the bond can be called in 5 years from now at a price of Rs.2590, what is it's YTC?

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St Aloysius (Deemed to be University), Mangaluru

SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

SHORT TERM DECISION MAKING IN FINANCE

Time: 2½ hrs.   **Max Marks: 60**

SECTION - A

Answer any FOUR of the following.   (4x4=16)

1. Calculate the Operating cycle of Alaska Ltd. from the following information.

Particulars	Rs.
Raw material consumption per annum	84,200
Annual cost of production	1,42,500
Annual cost of goods sold	1,53,000
Annual sales	1,95,000
Average value of current assets maintained:	
Raw material	12,400
Work-in-progress	7,200
Finished goods	12,200
Debtors	26,000

The company gets 30 days credit from their suppliers. All sales made by the firm are on credit only. You may take one year as equal to 365 days.

2. A firm has been offered a cash management service by a bank for Rs. 3,00,000 per year. It is estimated that such a service would not only eliminate 'excess' cash on deposits (Rs. 20,00,000) but also reduce its administration and other costs to the tune of Rs. 12,000 per month. Assuming the cost of capital of 12 percent, is it worthwhile for the firm to engage the management service?

3. Deccan Ltd. has current sales of Rs. 40, 00,000. The company is planning to introduce a cash discount policy of "2/10 net 30". As a result, the company expects the average collection period to go down by 10 days and 80 percent of the sales opt for a cash discount facility. If Deccan's required rate of return on investments in receivables is 18%. Should it introduce the new discount policy?

4. Devine Industries Ltd. Produces a product that has a monthly demand of 12,000 units. The product requires a Zinc component which is purchased at Rs. 60. For every finished product, one unit of the Zinc component is required. The ordering cost is Rs. 240 per order and the holding cost is 20% p.a.

   You are required to calculate:

   i) Economic order quantity.

   ii) If the minimum lot size to be supplied is 8,000 units, what is the extra cost, the company has to incur?

Contd...2

5. Evaluate the impact of recent amendments on the working capital management of SSIs. How have these changes influenced the access to credit and financial health of SSIs.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. The performance cost sheet of Alaska Ltd. provides you the following details. Estimate the Net Working Capital required by adding 10% to your computed figure to allow for contingencies.

Elements of cost	**Cost per unit (₹)**
Raw materials	416
Direct Labour	156
Overheads (Exclusive of Dep. Rs 10)	312
Total cost	884
Profit	156
Selling Price	1,040

The following additional information is provided:

Average raw material in stock- 4 weeks; Average material in progress ½ month. (Assume 50% completion stage in respect of conversion cost and 100% completion towards raw materials).

Finished goods in stock average 1 month; Credit allowed by suppliers 4 weeks and credit allowed by debtors 8 weeks. Time lag in payment of wages 1.5 weeks; Time lag in payment of overheads 1 month; Cash balance is expected to be Rs 8, 00,000.

You are required to prepare a statement showing the working capital needed to finance the level of activity of 12,00,000 units of output. You may assume that the production is carried evenly throughout the year and wages and overheads accrue similarly.

7. Blue Bell Corporation Ltd. has an annual cash requirement of Rs 30, 00,000 to meet its transaction needs during the next three-month cash planning period. Blue Bell Corporation Ltd. has short-term marketable securities in sizes of Rs 1,50,000, Rs 3,00,000, Rs 6,00,000, Rs 7,50,000, and Rs 15,00,000. All securities have an annual yield of 20 percent on the securities. The cost of conversion of these securities is Rs 3,000 per transaction. Determine the most economic marketable security size, indicating numerical analysis by using the table method. Also, show the economic lot size by applying the Baumol model.

8. Analyze the role of interest rates in the decision between short-term and long-term financing. How do fluctuations in interest rates impact the cost of capital?

Contd...3

9. The following are the details of the current assets and current liabilities of Aryona Ltd. Find out the maximum permissible bank finance as per three methods suggested by the Tandon Committee.

Current Assets	**₹ in Lakhs**	**Current Liabilities**	**₹ in Lakhs**
Raw material	400	Creditors	450
WIP	200	Other current liabilities	50
Finished goods	300	Bank borrowings	600
Receivables	600	Total	1,100
Other current assets	50		
Total	1,550		

The total Core Current Assets (CCA) are Rs 500 lakhs.

10. Roblox company currently has annual sales of Rs. 2, 50, 000 and an average collection period of 30 days. It is considering a more liberal credit policy. If the credit period is extended, the company expects sales and bad debt losses to increase in the following manner:

Credit policy	**Increase in the credit period**	**Increase in sales (Rs.)**	**Bad Debt (%)**
A	33 1/3%	5%	1.2
B	50%	7%	1.5
C	100%	8%	1.8
D	140%	10%	2.2

The selling price per unit is Rs. 4 total cost per unit at the current level of operation is Rs. 3 and variable cost per unit is Rs. 2.4. If the current bad debt loss is 1% of sales and required rate of return on investment is 20% which credit policy should be undertaken? Ignore taxes and assume 360 days in a year.

SECTION – C

11. **Case study:** **(1x12=12)**

Vimal Industries has requested to prepare a cash budget for the period of 6 months from January to June 2025. They have provided the following information:

(Rs. in lakh)

Particulars	**Jan.**	**Feb.**	**March**	**April**	**May**	**June**
Sales	80.00	100.00	120.00	120.00	120.00	120.00
Purchases	2.00	3.00	4.00	4.00	4.000	2.00
Wages	12.00	14.00	16.00	16.00	16.00	12.00
Manufacturing Exp.	26.00	27.00	28.00	28.00	28.00	26.00
Administrative Exp.	4.00	4.00	4.00	4.00	4.00	4.00
Distribution Exp.	4.00	6.00	8.00	8.00	8.00	4.00

Additional financial cash flows:

1. Receipt of Interest Rs. 2 lakh each in the months of Jan and May.
2. Receipt of dividend Rs. 3 lakh each in the months of March and June.
3. Sale of Securities in the month of June is Rs. 3 crores.
4. Payment of Interest during January for Rs. 50,000.
5. Payment of loan in the month of June for Rs. 1, 50, 00,000.
6. Interim dividend payment of Rs. 10, 00,000 in the month of April.
7. Installment payment of machine in the month of June for Rs. 42 lakhs.

You may assume: 10% of each month's sales for cash; customers are allowed a credit of one month; Creditors are allowed a credit of two months; wages are paid on the 1st of the next month.

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

ORGANIZATIONAL CHANGE AND DEVELOPMENT

Time: 2½ hrs.   **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Compare and contrast 'Planned' versus 'Unplanned Change'
2. Differentiate between an organization as an open system and an organization as a closed system, providing suitable examples.
3. Identify and elaborate on situations where team building serves as an effective intervention within the OD framework.
4. Examine the potential drawbacks and advantages of organizational culture, exploring whether it can be viewed more as a liability than an asset.
5. Illustrate how organizations have restructured in response to advancements in information technology, citing relevant examples.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Lewin's Force Field Analysis highlights the balance between driving and restraining forces in organizational change. Discuss how this model can be applied to manage transformation and promote a smooth transition.
7. Illustrate how renewing organizations anticipate industry trends and proactively adapt to change before it becomes imperative.
8. Discuss the model of diagnosing the organizational systems, explain how this model helps in identifying areas for improvement and change within an organization.
9. Explore the role of leadership in shaping and transmitting organizational culture, emphasizing its influence on values, behaviors, and workplace norms.
10. Discuss the challenges and opportunities organizations face when implementing IT-driven changes.

Contd...2

SECTION – C

11. **Case study:** **(1x12=12)**

Case Study: Apple – Sustaining Innovation through Organizational Design and Strategic Focus

Apple Inc. is globally recognized for its ability to consistently deliver breakthrough innovations while maintaining operational excellence and brand prestige. Its success is not solely attributed to product design or marketing—it stems from a deliberate organizational structure and culture that prioritize focus, expertise, and cross-functional collaboration. Apple operates under a functional structure, where departments are organized by areas of specialization (e.g., design, hardware, software), rather than by product lines. This allows deep domain expertise and tight control over quality and innovation.

The company's leadership, especially under Steve Jobs and later Tim Cook, emphasized simplicity, user experience, and strategic restraint. Apple deliberately limits its product portfolio, enabling teams to concentrate on refining a few high-impact offerings. This focus supports agility, reduces complexity, and ensures that innovation is purposeful rather than reactive. Internally, Apple fosters a culture of excellence and accountability. Teams are encouraged to challenge ideas, iterate rapidly, and maintain secrecy around product development. Decision-making is centralized, with top executives deeply involved in product strategy and design choices. This model contrasts with decentralized innovation seen in many tech firms, yet it has enabled Apple to maintain coherence and brand integrity.Apple also invests heavily in R&D, prototyping, and user testing. Its ability to integrate hardware, software, and services into a seamless ecosystem—seen in products like the iPhone, Apple Watch, and AirPods—demonstrates strategic alignment across departments. The company adapts to global trends such as sustainability, privacy, and health tech, without compromising its design philosophy. Despite its scale, Apple retains startup-like agility by maintaining small, focused teams and a culture of continuous improvement. Its organizational design supports long-term innovation, customer loyalty, and market leadership.

1. Evaluate how Apple's functional organizational structure contributes to sustained innovation and product excellence. ***(6 marks)***
2. Analyze the strategic choices Apple makes to remain agile and customer-focused in a rapidly evolving tech landscape. ***(6 marks)***

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

INTERNATIONAL AND STRATEGIC HUMAN RESOURCE MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Elucidate the European model IHRM.
2. "Ethnocentrism is an emotional attitude that one's own race, nation, or culture is superior to all others". Discuss.
3. Explain the advantages and disadvantages of balance sheet approach in international compensation.
4. Why is it important to view human resource management from an investment perspective rather than a cost perspective?
5. Explain the various retention strategies that are used in the MNCs?

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Explain the Harvard Model of HRM and its application in international organizations.
7. Discuss the components of pre-departure training.
8. Analyse the significance of performance management in multinational companies, considering its role in driving organizational effectiveness and employee engagement. How does performance management contribute to strategic alignment and goal attainment in diverse global contexts?
9. Compare Strategic HRM and Traditional HRM in terms of their objectives, focus, and impact on organizational performance. Provide examples to support your answer.
10. Discuss how the adoption of e-HR systems enhances strategic decision-making in human resource management.

SECTION – C

11. **Case study:** **(1x12=12)**

GlobalSteel Ltd., a multinational steel manufacturer headquartered in Germany, faced declining productivity and inconsistent performance across its plants in India, Brazil, and South Korea. The company's existing performance

Contd...2

appraisal system was outdated, relying solely on annual reviews and subjective supervisor ratings. Employees felt the system was unfair, feedback was infrequent, and high performers were not adequately rewarded. As a result, turnover increased and employee morale declined significantly. To address the crisis, GlobalSteel introduced a comprehensive performance management system focusing on continuous feedback, SMART goal setting, 360-degree feedback, and regular development discussions. Managers were trained to coach rather than just evaluate employees. The company also linked performance metrics with career development opportunities and rewards. Within a year, productivity improved by 25%, employee satisfaction scores increased, and voluntary turnover decreased. The case highlights how performance management, when implemented strategically, can align individual goals with organizational objectives.

Questions:

1.How did the new performance management system contribute to GlobalSteel's organizational performance?

2.What key factors should companies consider when designing performance management systems in a global context?

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

STRATEGIC BRAND MANAGEMENT

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Briefly explain how brand mantras can be used effectively by brands to reinforce brand identity.
2. Demonstrate using a suitable example the role of point of purchase (POP) displays in marketing communication.
3. Select a brand of your choice (e.g., Red Bull or Apple) and demonstrate how quantitative research techniques (e.g., surveys or rating scales) can be applied to measure the five personality traits of the chosen brand."
4. Discuss the role of brand equity report in brand equity management.
5. Using two brands of your choice demonstrate how a corporate brand is different from a product brand.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Keller's Customer-Based Brand Equity Pyramid provides a roadmap and guidance for brand building, a yardstick by which brands can assess their progress in their brand building efforts as well as a guide for marketing research initiatives. Using a neat diagram describe Keller's Customer-Based Brand Equity Pyramid and its various levels with a suitable example.
7. Describe how a successfully executed sales promotion campaign can contribute to building brand equity. Bring out the differences between sales promotion and consumer promotions.
8. Brand Milton already has very good equity in the market. The company wants to cement the equity by positioning Milton as an innovation driven brand that is sensitive to the consumer needs. Milton has also announced its strategic partnership with Cult. fit, a fitness and wellness powerhouse, to introduce line of dynamic-colored bottles at cult. Fit gyms. Discuss how Milton can leverage secondary associations to build brand equity.
9. Critically assess the long-term impact of social media marketing on sustaining brand equity compared to traditional marketing methods. Illustrate with an example of your choice.

Contd...2

10. Examine how marketers can tactically build strong global brands by relying on the ten commandments of global branding.

SECTION – C

11. **Case study:** **(1x12=12)**

Gresbond by Kajaria, the premium tile adhesive brand from India's largest tile manufacturer, has launched its latest digital campaign for 2025. Titled Gresbond Se Lagaya Hota, To Aisa Nahi Hota, the initiative moves away from conventional product advertising and instead positions itself at the intersection of humour, cultural resonance and premium brand storytelling. The campaign is structured as a ten-ad digital series that mirrors the comic style and language of internet humour. Each ad presents everyday situations where something goes wrong, before suggesting that the outcome could have been avoided with Gresbond's trusted adhesive strength. Tile adhesives are rarely seen as exciting consumer products. Marketing in the category has typically centred around durability claims, technical demonstrations or visual proof of performance. With this campaign, Kajaria has attempted to push the boundaries of how such functional products can be communicated, aiming to keep audiences entertained while conveying reliability. The format of the campaign has been tailored to social-first audiences. The ten ads are optimised for quick viewing on mobile devices, encouraging sharing across social platforms. The humour-driven content is expected to thrive in the fast-paced digital ecosystem where relatability and entertainment drive recall. "With Gresbond Se Lagaya Hota, To Aisa Nahi Hota, we've demonstrated that premium products deserve premium storytelling — intelligent, relatable, and memorable," explains Kajaria. In addition to relatability, the campaign's storytelling emphasises subtle but clear product placement. Unlike traditional product-heavy advertising, the brand presence is seamlessly integrated into the narrative, ensuring it feels organic and avoids disrupting the flow of humour. The decision to launch this campaign stems from the need to educate not just consumers, but also dealers and contractors. Tiles today are larger, denser and far more premium than before. Big slabs, marble and vitrified tiles all have zero porosity, meaning cement cannot bond effectively with them. Adhesives are not just preferable in these cases, they are essential. By positioning Gresbond as the solution for these modern needs, Kajaria is addressing a genuine industry pain point while giving its brand a relatable and memorable voice. In India, cement is still the default choice for fixing tiles. However, it comes with significant limitations. Cement tends to shrink after drying, which weakens the bond between the tile and the surface. This often results in cracks, hollowness and, over time, tile failure.

Contd...3

By contrast, tile adhesives are engineered with special polymers that not only offer stronger grip but also flex with the surface, preventing such issues. The Gresbond campaign taps into this awareness gap, showing how the right adhesive can avoid these common mishaps. Each humorous ad underscores why cement is an outdated solution, and why modern adhesives should be the standard. There are three dimensions that make this campaign distinct. First is the use of intelligent humour, which shifts the communication from being a product push to an engaging story. Second, the relatability of scenarios ensures audiences connect instantly. And third, the execution maintains a premium feel that aligns with Gresbond's positioning as a top-tier adhesive brand. The move also places Kajaria in the broader conversation of how even functional and industrial products are now being marketed with storytelling techniques more common to consumer goods and entertainment. Brands across sectors have been experimenting with wit and humour in marketing, but few in the building materials space have done so at this scale. Globally, adhesives have long been the standard for tile fixing, yet in India the category has remained underutilised. This is largely because cement has been inexpensive and familiar, despite its flaws. But consumer expectations are changing. With rising demand for premium homes, better finishes and durable interiors, the value of quality is gaining prominence in the Indian market. Through this campaign, Gresbond seeks to push the conversation forward. It highlights that adhesives not only ensure strength but also offer speed, longevity and professional results. Backed by Kajaria's expansive distribution network, Gresbond is well placed to meet this shift in market behaviour.

Questions 1. Evaluate using the 6 C'S of IMC how Gresbond by Kajaria was able to elevate the conversation around tile adhesives through a campaign that entertains, resonates, and underscores

2. Evaluate how the IMC campaign serves as a consumer education exercise and a push to modernise the category

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

CONSUMER BEHAVIOUR

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Develop 4 statements using Likert scale to understand the preference of degree students in pursuing higher education abroad.
2. Discuss the Instrumental conditioning theory and examine the marketing applications.
3. Differentiate between the Tri-component model Vs the Multi-attribute model of attitude formation.
4. Highlight some of the major factors that positively influence reference groups.
5. Examine the various problem-solving levels.
   Miss Crystal, a final year MBA student, wishes to take membership of a fitness club. Identify the problem-solving route she is likely to adopt. Justify.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Mr. Albert wishes to purchase a 560-litre refrigerator costing Rs. 99,999/-. Apply the consumer decision making model to assist Mr. Albert.
7. "Maslow's hierarchy of needs states that individuals seek to satisfy lower-level needs before higher-level needs." Elucidate.
8. Apply a suitable model to measure the satisfaction of consumers towards eco-friendly products.
9. Discuss the traditional life cycle of a family. Which of the five stages is most lucrative segment for each of the following products/ service. Give reasons. a] Netflix subscriptions b] Domino's Pizza c] Zumba life membership d] Pilgrimage to Holy place.
10. "The cognitive model of decision-making focusses on the processes by which consumers seek and evaluate information about selected brands and retail outlets." Justify.

SECTION – C

11. **Case study:** **(1x12=12)**

Apex child rights body NCPCR asked Mondelez India-owned brand Bournvita to withdraw all "misleading" advertisements, packaging and labels after a video claimed that the health drink has high sugar content, news agency PTI

Contd...2

reported in November 2023. In a notice to the confectionery major, the National Commission for Protection of Child Rights (NCPCR) also asked it to send within seven days a detailed explanation or report to apprise the panel on the matter. In the notice to Deepak Iyer, president-India, Mondelez International, the child rights body said," The commission in this regard observes that the product manufactured by your company is misleading the customers through it product packaging and advertisements. The commission observes that your product's labelling, packaging, display and advertisement claims are misleading for the general public." It asked Mondelez International to review and withdraw all "misleading advertisements, packaging and labels, and further send a detailed explanation/report to apprise the commission in the said matter within seven days". Although the Food Safety and Standards Authority of India (FSSAI) did not specifically refer to the Bournvita issue, the regulator in a statement earlier this month said that it had taken note of various media reports, including on social media about various health claims made by the Food Business Operators (FBOs) in the country. The regulator further said it has set up a dedicated advertisement monitoring committee which periodically scrutinizes advertisements and claims being made by FBOs on various channels, including social media and e-commerce platforms. NAPi India (Nutrition Advocacy in Public Interest), a think-tank on nutrition, tweeted: "The argument about Bournvita's ingredients per serve is even more manipulative. Bournvita has almost 50% sugar per 100 grams. It's way beyond the high sugar thresholds prescribed by WHO." It tagged the World Health Organization, which has over 12 million followers on Twitter. Bournvita, however, has rejected all these claims, and termed the influencer's video as unscientific. Rejecting it, Bournvita in a statement said over the last seven decades, it has earned the trust of consumers in India by being a scientifically formulated product that adheres to quality standards and complies with the laws of the land. "We would again like to reinforce that the formulation has been scientifically crafted by a team of nutritionists and food scientists to offer the best of taste and health. All our claims are verified and transparent and all ingredients have regulatory approvals. All the necessary nutritional information is mentioned on the pack for consumers to make informed choices," said a Bournvita spokesperson.

Questions:

1. Discuss the ethical issues in this case. Examine the role of NCPCR in monitoring advertisements that are false and misleading.
2. Analyze Bournvita's advertising strategy intended to address children. In what way is it manipulative?

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

DATABASE MANAGEMENT SYSTEM

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Data integrity is the ability of a database to accurately represent the real world. Explain the statement and discuss the types of data integrity with suitable examples.
2. Explain the distinction between Char and Varchar data types in DBMS.
3. Explain the purpose of the GROUP BY clause in SQL. How does it help in summarizing data? Support your answer with a relevant example.
4. Create a query using ROW_NUMBER() to assign a unique sequence number to each employee within their department, ordered by joining date. Explain the logic.
5. Examine the elements of the following group by SQL query SELECT gender, city, avg(Salary) AS avg _Salary FROM employees GROUP BY gender, city having sum(salary) >= 300000

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Examine the different DBMS keys through examples, highlighting their role in ensuring data integrity
7. Explain the major SQL clauses and demonstrate their practical applications through relevant use cases
8. Explain how the GROUP BY clause interacts with aggregate functions like SUM(), AVG(), and COUNT(). Provide a query that demonstrates this relationship. Discuss the role of the HAVING clause when used with GROUP BY and explain how it is different from the WHERE clause with examples to clarify
9. Explain the concept of window framing in Over() clause
   Describe the various frame bounds and demonstrate how they can be used to define specific subsets of rows for calculations, such as moving averages or cumulative sums, within a partition
10. Discuss the types of set operations in MySQL, illustrating each with a suitable example

Contd...2

SECTION – C

11. **Case study:** **(1x12=12)**

Following is the SQL statement executed on the table *Employees* *select*, avg(salary) over(partition by gender order by salary desc rows between 2 preceding and current row) as Salary_MA from Employees*

i. Dissect the SQL and provide component-by-component explanation
ii. Rewrite the query to calculate a 5-period moving average
iii. Modify the query to round the average salary to 1 decimal place
iv. Change the query to compute the moving average across all employees, regardless of gender
v. Add a filter to include only employees with salary above 50,000
vi. Create a query to compute the cumulative average salary within each gender group

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SCHOOL OF BUSINESS AND MANAGEMENT (PG PROGRAMME)

M.B.A – Semester III – P.G Examination

November – 2025

PREDICTIVE ANALYTICS

Time: 2½ hrs. **Max Marks: 60**

SECTION - A

Answer any FOUR of the following. **(4x4=16)**

1. Illustrate the concepts of True Positive, True Negative, False Positive, and False Negative using a binary classification confusion matrix.
2. Discuss the fundamental idea behind Logistic Regression and outline how it contrasts with Linear Regression.
3. Discuss the concept of ensemble learning, using the Random Forest classifier as an illustrative example.
4. Examine the role of the centroid in K-Means clustering. How is it updated during the algorithm's execution?
5. Discuss the concept of train-test split in machine learning. Explain its significance in building reliable predictive models.

SECTION - B

Answer any FOUR of the following. **(4x8=32)**

6. Assume that you are modelling monthly sales data of Reliance Trend. Explain the time series components you can expect in the series.
7. Explain how to build a dummy variable regression model in Python, detail the key steps in the process.
8. Examine the steps involved in the implementation of the VotingRegressor algorithm in Python.
9. Examine the steps involved in performing Principal Component Analysis (PCA) on a dataset.
10. Explain the key steps for implementing and estimating a Holt's trend adjusted exponential smoothing model in Python.

SECTION – C

11. **Case study:** **(1x12=12)**

Following is the confusion matrix of a multi-class classification model that classifies images of dogs into the following breeds: Greyhound, Mastiff and Samoyed.

Contd...2

			Predicted	
		Greyhound	**Mastiff**	**Samoyed**
	Greyhound	250	25	18
Actual	**Mastiff**	21	320	24
	Samoyed	22	12	180

a) Calculate TPs, TNs, FNs, and FPs for each class

b) Compute and interpret Accuracy Score, Precision, True Positive Rate and True Negative Rate

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