



**Rajgad Institute of Management Research & Development,
Pune- 43**

BEST PRACTICE 1:

MODEL ANSWER PAPERS AND SCHEME OF MARKING

- 1. Marketing Management (201)**
- 2. Financial Management (202)**
- 3. Human Resource Management (203)**
- 4. Decision Science (204)**
- 5. Operation & Supply Chain Management (205)**
- 6. Management Information System (206)**

**Rajgad Institute of Management Research &
Development, Pune 43**

**Model Answers & Scheme of Marking
Marketing Management (201)**

An 'IQAC Cell' Initiative: January - April 2019





**Rajgad Dnyanpeeth's
Rajgad Institute of Management
Research & Development, Pune-43**

**Approved by AICTE, Recognized by DTE (Govt. of Maharashtra),
Affiliated to Savitribai Phule Pune University**

Model Answers & Scheme of Marking

Subject Name Marketing Management

Subject Code 201

Semester II

Specialization NA

Faculty Prof. Manjiri D. Kalyankar

Model Answer for Question Paper SPPU December 2018

Model Answer & Scheme of marking for Question paper: December 2018 SPPU

Q. 1) What is the concept of PLC? Explain the characteristics of PLC stages on any durable goods. (10 Marks)

Marking Scheme:

- Explaining the concept of PLC (2 Marks).
- Characteristics of PLC stages on any durable goods. (8 Marks)

Model Answer:

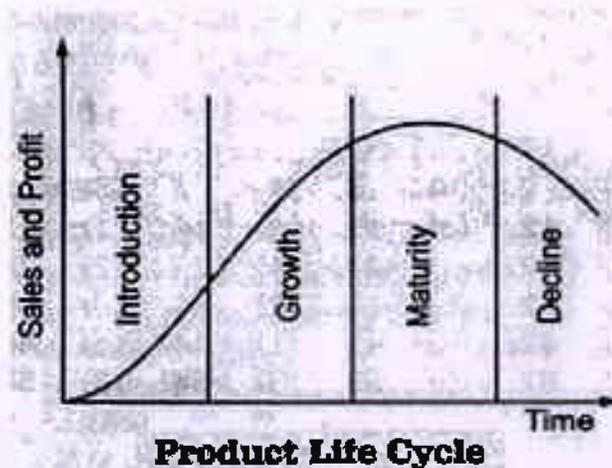
The concept of PLC:

The Product Life Cycle (PLC) is the life span of a product from development, through testing, promotion, growth and marketing, to decline and perhaps regeneration.

Stages in Product Life Cycle (PLC)

The Product Life Cycle comprises four stages

1. Introduction
2. Growth
3. Maturity
4. Decline



Characteristics of PLC stages for Sports bicycle:

Introduction Stage

The introduction stage of the PLC is characterized as follows

- Sales will be generally are low and somewhat slow to take off.
- Production costs for Sports bicycle tends to be high on a per unit basis because the firm has yet to experience any significant scale economies.
- Profits, because of low sales and high unit costs, tend to be negative or very low.

- Competitors of Sports bicycle tend to be few in number, indeed there may be only one major player in the market place-the innovating firm.
- Marketing cost needed to create customer awareness, interest and for introducing the product into the distribution channels are high.
- In the introduction stage, innovative featured Sports bicycle may be launched

Innovation means

- Product designing
- New ideas
- Creativity

Growth Stage

This stage of PLC has the following features:

- Sports bicycle sales increase rapidly during the growth stage.
- Costs for Sports bicycle will be production reduced due to economies of scale.
- Profits rise significantly and rapidly during this stage.
- Competition continues to grow throughout this stage.
- The category of consumers in the growth stage of product is somewhat more price sensitive, more risk averse and therefore, somewhat more hesitant to adopt the product.

Maturity Stage

This stage of PLC is characterized as follows

- Sales of Sports bicycle continue to grow during the early part of maturity, but at a much slower rate than experienced during the growth phase. At some point, sales reach the peak. This peak may last for extended periods of time. In fact, the maturity phase of the life-cycle is the longest phase for most products.
- Costs continue to rise during maturity because of market saturation and continually intensifying competitions.
- At this point, the market reaches saturation. Producers begin to leave the market due to poor margins. Promotion becomes more widespread and uses a greater variety of media.
- Profit starts to decline in this stage.

Decline Stage

- This is the last stage of PLC which is characterized as follows
- At this stage, there is a downturn in the market.
- Profit margins touch a low level, competition becomes severe and customers start using newer and better products.

As per Philip Kotler, stages of product life cycle has been divided into

1. Market Introduction
2. Market Growth
3. Market Maturity
4. Market Decline

Q. 2) Write short notes on (any two) (With example)

- a) Setting pricing objectives
 - b) Promotional pricing
 - c) Differentiated pricing
- (10 Marks)

Marking Scheme:

- Note on Promotional Pricing (4Marks).
 - Note on Differentiated pricing (4 Marks).
 - Examples of Each (2 Marks)
-

Model Answer:

(2) Promotional pricing

Definition: Promotional Pricing

Promotional Pricing is one of the most powerful sales promotion techniques in which the prices are reduced drastically for a short duration. It is also termed as On Sale pricing. This helps to increase the demand for the product.

Price promotions or promotional pricing is the sales promotion technique which involves reducing the price of a product or services in short term to attract more customers & increase the sales volume.

Promotional pricing is widely used both by manufacturers & retailers to gain market share & attract the customers to product, shop or a brand. Manufacturers use this technique to make customers aware of a particular product line or services or a particular brand. While for retailers, instead of a particular product or brand, the price discount is given on many products so as to get the consumer to buy a variety of things from the shop.

Promotional pricing is an informed decision by the company to give price discount on particular product or brand & calculations are done in order to assess the feasibility of discount & the time period for which it could be given. The rationale behind giving price discount is that any loss experienced would be compensated by the increase in sales volume and the addition of new loyal customers.

Promotional Pricing Advantages

1. Building brand awareness
2. Newsworthiness
3. Inventory turnover
4. Cross marketing

Example:

Special-Event Pricing: Companies offer discounts and rebates on festivals, during the off-seasons with the intention to pull as many customers as possible.

(3) Differentiated Pricing Techniques

Differential pricing is the strategy of selling the same product to different customers at different prices. The Differential Pricing is a method of charging different prices for the same type of a product, and for the same number of quantities from different customers based on the product form, payment terms, time of delivery, customer segment, etc.

The companies adopt the differential pricing method with an objective to maximize the profit of an organization. This strategy is also known as discriminatory pricing or multiple pricing.

The goal of differentiated pricing is to earn higher margins in one of two ways:

- Higher prices in a location with less competition. Examples: airport, resort, pro shop, entertainment venue.
- Lower prices whose lower margins are offset by producing enough additional sales to gain higher profits overall. Examples: last-minute sales of vacant rooms or cheap tickets.

Basis for Differentiation	Situations with Special Prices
Customer Segment	Discounts for Students; Seniors; Residents of taxing (e.g. park) district
Product Form	Ascending price per milligram for Sweetener box v. packets vs. tablets
Channel of Distribution	Ascending price for online vs. big box store vs. specialty store
Location	Higher price for spot with less competition (pro shop, airport, resort). Lower price in outlet center
Time	Lower price for advance purchase; lowest price for last minute purchase of perishable good. (To the hotelier, the most costly hotel room is the empty one.)
Geography	Ascending golf fees for rural vs. urban vs. resort; lower cost plane ticket when flying from

Example:

Location Pricing: The companies charge different prices for the same product on the basis of different locations where it is offered.

Eg. In movie theaters the customer pays different amounts for the different locations from where they can watch movies.

Q. 3) Explain the role of marketing channels and 'Channel levels. (10 Marks)

Marking Scheme:

- **Definition of marketing channels and Channel level (2 Marks).**
- **Description of role of marketing channels and 'Channel levels – 8points. (8 Marks).**

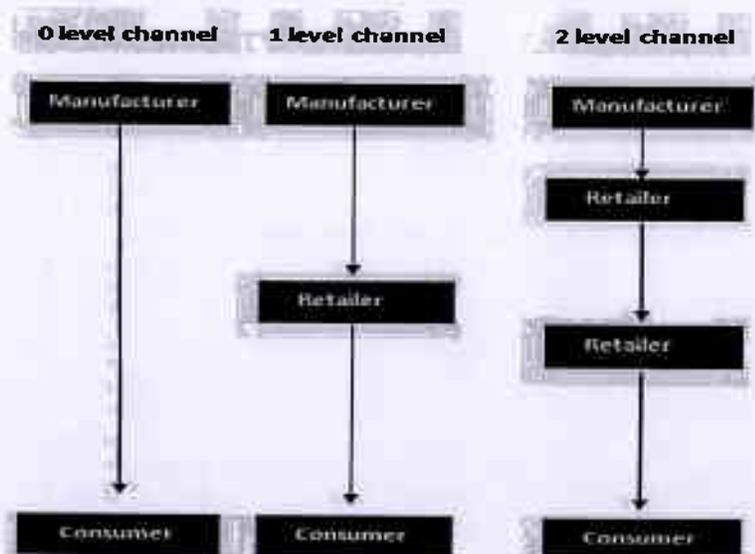
Model Answer:

According to Cundiff, Still and Govani :

"A channel of Distribution or Marketing Channels are the distribution networks through which producer's products flow to the market. "

A marketing channel is a set of interdependent organizations involved in the process of placing products and services with consumers.

Channel level refers to the intermediary in marketing distribution channel between the producer/manufacturer and the end consumer. Types of Channel level are as follows:



The role of marketing channels and 'Channel levels are as follows:

1) Information Provider:

Middlemen have a role in providing information about the market to the manufacturer. Developments like changes in customer demography, psychography, media habits and the entry of a new competitor or a new brand and changes in customer preferences are some of the information that all manufacturers want. Since these middlemen are present in the market place and close to the customer they can provide this information at no additional cost.

2) Price Stability:

Maintaining price stability in the market is another function a middleman performs. Many a time the middlemen absorb an increase in the price of the products and continue to charge the customer the same old price. This is because of the intra-middlemen competition. The middleman also maintains price stability by keeping his overheads low.

3) Promotion:

Promoting the product/s in his territory is another function that middlemen perform. Many of them design their own sales incentive programmes, aimed at building customers traffic at the other outlets.

4) Financing:

Middlemen finance manufacturers' operation by providing the necessary working capital in the form of advance payments for goods and services. The payment is in advance even though the manufacturer may extend credit, because it has to be made even before the products are bought, consumed and paid for by the ultimate consumer.

5) Title:

Most middlemen take the title to the goods, services and trade in their own name. This helps in diffusing the risks between the manufacturer and middlemen. This also enables middlemen to be in physical possession of the goods, which in turn enables them to meet customer demand at very moment it arises.

6) Help in Production Function:

The producer can concentrate on the production function leaving the marketing problem to middlemen who specialize in the profession. Their services can best utilized for selling the product. The finance, required for organizing marketing can profitably be used in production where the rate of return would be greater.

7) Matching Demand and Supply:

The chief function of intermediaries is to assemble the goods from many producers in such a manner that a customer can affect purchases with ease. The goal of marketing is the matching of segments of supply and demand.

8) Pricing:

In pricing a product, the producer should invite the suggestions from the middlemen who are very close to the ultimate users and know what they can pay for the product. Pricing may be different for different markets or products depending upon the channel of distribution.

9) Standardizing Transactions:

Standardizing transactions is another function of marketing channels. Taking the example of the milk delivery system, the distribution is standardized throughout the marketing channel so that consumers do not need to negotiate with the sellers on any aspect, whether it is price, quantity, method of payment or location of the product.

By standardizing transactions, marketing channels automate most of the stages in the flow of products from the manufacturer to the customers.

10) Matching Buyers and Sellers:

The most crucial activity of the marketing channel members is to match the needs of buyers and sellers. Normally, most sellers do not know where they can reach potential buyers and similarly, buyers do not know where they can reach potential sellers. From this perspective, the role of the marketing channel to match the buyers' and sellers' needs becomes very vital. For example, a painter of modern art may not know where he can reach his potential customers, but an art dealer would surely know.

Q. 4) Define the concept of Target Audience. Explain the characteristics of 'Effective Communication'. (10 Marks)

Marking Scheme:

- Defining the concept of Target Audience (2 Marks).
- Explain the characteristics of 'Effective Communication' (8 Marks).

Model Answer:

Target audience

A target audience is the demographic of people most likely to be interested in your product or service

A target audience is the intended audience or readership of a publication, advertisement, or other message. In marketing and advertising, it is a particular group of consumers within the predetermined target market, identified as the targets or recipients for a particular advertisement or message.

The characteristics of 'Effective Communication' are as follows:

1. **Completeness**
Effective communications are complete, i.e. the receiver gets all the information he needs to process the message and take action. A complete message reduces the need for follow-up questions and smoothens the communication process.
2. **Conciseness**
Conciseness is about keeping your message to a point. This is more about the content of your message rather than its length. Even a short memo can include irrelevant or redundant information. Conciseness helps the receiver focus on what's important, speeds up the processing of information and caters for improved understanding.
3. **Consideration**
Effective communication takes into account the receiver's background and points of view. If your message hits a nerve or sounds as disrespectful, the emotional reaction of the receiver might affect the perception of your message. Also, tailoring your message to your audience – e.g. by using argumentations and examples which are relevant to their experience – makes it easier for them to process the contents.
4. **Concreteness**
A concrete message is specific, tangible, and vivid. It's supported by facts and figures for enhanced credibility. It helps your audience gain an overview of the broader picture. Concreteness mitigates the risk of misunderstanding, fosters trust and encourages constructive criticism.
5. **Courtesy**
Courtesy and consideration complement each other in effective communications. Courtesy means respecting the receiver's culture, values and beliefs – i.e. crafting a message that is genuinely polite and unbiased.
6. **Clearness**
The clearer your message, the easier it gets for the receiver to decode it according to your original intent. While this sounds obvious, most communication pitfalls originate from lack of clarity. Want to deliver an effective message? Start with a clear communication goal and accurate thoughts. Clear communications build on exact terminology and concrete words, to reduce ambiguities and confusion in the communication process.
7. **Correctness**
Correct grammar and syntax vouch for increased effectiveness and credibility of your message. Formal errors might affect the clarity of your message, trigger ambiguity and

raise doubts. They might also have a negative impact on the overall perception of the message, which could be seen as sloppy or negligent.

Q. 5) Discuss the process and types of marketing controls with an example
(10 Marks)

Marking Scheme:

- Description of the process of marketing control (4 Marks).
- Description of types of marketing controls (4 Marks).
- Example (2 Marks).

Model Answer:

Definition- Marketing Controls:

Marketing control refers to the measurement of the company's marketing performance in terms of the sales revenue generated, market share captured, and profit earned. Here, the actual result is compared with the standard set, to find out the deviation and make rectifications accordingly.

The process of marketing control is as follows:



1. **Determining Marketing Objectives:** The initial step in marketing control is the setting up of the marketing goals, which are in alignment with the organizational objectives.
2. **Establishing Performance Standards:** To streamline the marketing process, benchmarking is essential. Therefore, performance standards are set for carrying out marketing operations.
3. **Comparing Results with Standard Performance:** The actual marketing performance is compared and matched with the set standards and variation is measured.
4. **Analyzing the Deviations:** This difference is then examined to find out the areas which require correction, and if the deviation exceeds the decided range, it should be informed to the top management.

5. **Rectification and Improvement:** After studying the problem area responsible for low performance, necessary steps should be taken to fill in the gap between the actual and expected returns.

Thus, marketing can be seen as a complete function, which needs to be performed successfully through proper control over the related activities, to ascertain the achievement of the set goals and objectives.

Types of marketing controls techniques:

1. Annual Plan Control

As the name suggests, the plans which are determined for one year for the control of operational activities through the successful implementation of management by objectives is termed as annual plan control.

Such programs are usually framed and controlled by the top management of the organization.

2. Profitability Control

Maximizing the profit margin has become a difficult task in today's highly competitive market. This has enforced pressure on the marketing team of the organizations too.

They now need to frame strategies for profit assessment and control in the different product line, trade channels and territories.

3. Efficiency Control

The management and the marketers are regularly involved in finding out ways to improve the task performance in the organization. These improvements bring in efficiency and perfection in marketing operations.

4. Strategic Control

The external environment creates a significant impact on the organization's marketing strategies. To understand and align the plans with the prevailing external environment and the internal environment of the organization.

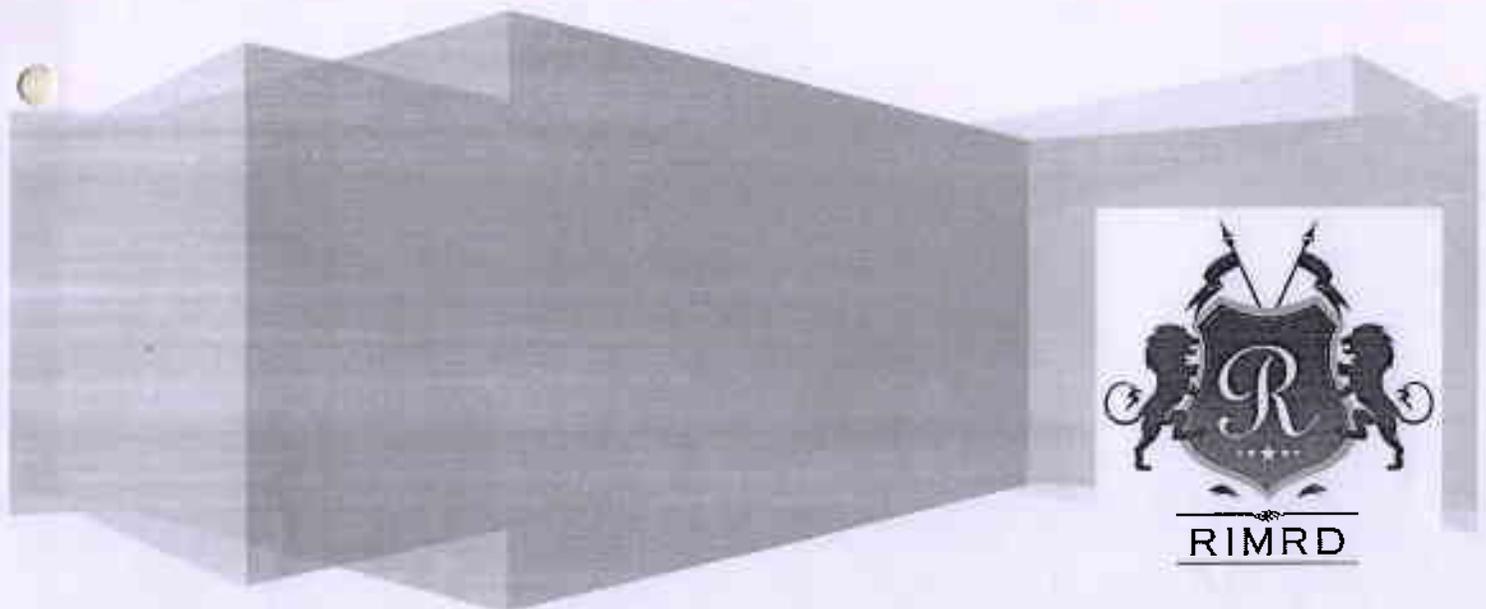
For example: If a marketing campaign includes a new company mascot and customer feedback indicates that the mascot is not popular, then the mascot should be removed from the marketing plan. It is an example of Strategic Control



**Rajgad Institute of Management Research &
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**Model Answers & Scheme of Marking
Financial Management (202)**

An 'IQAC Cell' Initiative: January - April 2019





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Model Answers & Scheme of Marking

Subject Name Financial Management

Subject Code 202

Semester II

Specialization NA

Faculty Prof. Abhay A. Pathak

Model Answer for Question Paper SPPU December 2018

Model Answer & Scheme of marking for Question paper: December 2018 SPPU

Q1) Explain modern approaches to Financial Management. [10 marks]

Marking Scheme:

- Explain traditional & modern approach [6 marks]
- Decision of financial manager [4 marks]

Model Answer:

The scope & functions of financial management is classified in two categories.

① Traditional Approach

② Modern Approach

① Traditional Approach: -

According to this approach, the scope of the finance function is restricted to "procurement of funds by corporate enterprise to meet their financial needs.

The term 'procurement' refers to raising of funds externally as well as the inter related aspects of raising funds. In traditional approach the resources could be raised from the combination of the available sources.

Limitations of traditional approach

- i) This approach is confined to 'procurement of funds' only.
- ii) It fails to consider an important aspects i.e. allocation of funds.
- iii) It deals with only outside i.e. investors, investment bankers.
- iv) The internal decision making is completely ignored in this approach.
- v) The traditional approach fails to consider the problems involved in working capital management.
- vi) The traditional approach neglected the issues relating to the allocation of funds & failed to make financial decisions.

Traditional view of financial management is mainly focused on obtaining funds & utilisation of funds & utilisation of funds in business undertaking.

③ Modern approach :

The modern approach is an analytical way of looking into financial problems of the firm. Financial management is concerned with the issues involved in raising of funds & efficient & wise allocation of funds.

According to this approach, the finance function covers both acquisition of funds as well as the allocation of funds to various uses.

Functions of Finance :-

There are three finance functions

- i) Investment decision
- ii) Financing decision
- iii) Dividend decision

i) Investment decision :-

Investment decision relates to selection of asset in which funds will be invested by a firm. The asset that can be acquired by a firm may be long term

asset & short term asset. Decision with regard to long term assets is called capital budgeting.

ii) Financing decision:

Determination of the proportion of equity & debt is the main issue in financing decision. Once the best combination of debt & equity is determined, the next step is raising appropriate amount through available sources.

iii) Dividend Decision: -

A firm distribute all profits or retain them or distribute a portion & retain the balance with it. The decision depends upon the preference of the shareholders & investment opportunities available to the firm.

Q 2) a) Calculate weighted average cost of capital from the following:

Source of capital	Book value of capital in rupees	Specific cost %
Equity Share	25,00,000	11
Preference Share	18,00,000	13
Bank loan	15,00,000	10

[10 marks]

Marking Scheme:

- Weighted average cost of Capital [5 marks]

Model Answer:

Computation of Weighted Average Cost of Capital (WACC):

Components of Capital	Amt	Weighted Average Capital	Tax Adjusted cost of Capital	Weighted Average cost of Capital
Equity Shares	25,00,000	0.45	11	4.95
Preference Shares	18,00,000	0.32	13	4.16
Bank loan	13,00,000	0.23	10	2.3
Total	56,00,000			11.41

Weighted average cost of capital as per book value = 11.41

b) What are the factors affecting capital structure?

Marking Scheme:

- Explain any five factors [5 marks]

Model Answer:

The factors affecting capital structure as below:

① Nature of Business :-

The nature of business can have strong effect on the pattern of capital structure. A business with fixed & regular income can safely rely on debentures & preference shares which necessitate regular payment of fixed interest & dividends.

② Money Market Conditions :-

During boom period the investors will go in for equity shares with the expectations of high dividends.

③ Stability of Earning :-

The decision about the type of securities to be issued should be taken in the context of earning of the company

④ Capital Requirement :-

If a small amount of capital is needed, only type of security such as equity shares can be issued.

⑤ Retaining Control :-

Preference share & debentures have no voting rights, more funds can be raised through their issue & at the same time control of the company can be retained by the existing management.

⑥ Legal Restrictions :-

The companies have to comply with legal provisions regarding the issue of different.

Q3) Prepare Fund flow statement from the following information. [10 marks]

Liabilities	F.Y. 2015-16	F.Y. 2016-17	Assets	2015-16	2016-17
Equity Shares	80,000	1,15,000	Plant	15,000	20,000
Creditors	21,200	14,000	Stock	24,200	27,200
P&L a/c	2,800	6,200	Debtors	36,200	34,000
			Cash Balance	28,600	54,000
	1,04,000	1,35,200		1,04,000	1,35,200

Marking Scheme :

- Fund flow statement [6 marks]
- Profit & Loss adjusted account [2 marks]
- Working note [2 marks]

Model Answer:

① Statement of Fund Flow

Sources	Amt ₹	Application	Amt ₹
Issue of Shares	35,000	Purchase of Plant	5,000
Funds from operations	3,400	Increase of Working Capital	33,400
Total	38,400	Total	38,400

② Adjusted P&L a/c for the year ended 2016-17

Particular	Amt ₹	Particular	Amt ₹
		By Bal b/d	2,800
		By Funds from operations	3,400
To Bal b/d	6,200		
Total	6,200	Total	6,200

③ Working Note :-

Changes in working capital

Particulars	2015-16 Amt ₹	2016-17 Amt ₹	Increase Amt ₹	Decrease Amt ₹
① <u>Current Assets</u>				
• Stock	24,200	27,200	3,000	
• Debtors	36,200	34,000		2,200
• Cash bal	28,600	54,000	25,400	
② <u>Current Liabilities</u>				
• Creditors	21,200	14,000	7,200	
			35,600	2,200

∴ Therefore Increasing working capital 33,400

Plant A/c

or

Particular	Amt ₹	Particular	Amt ₹
To bal b/d	15,000		
Purchase of plant	5,000	By bal c/d	20,000
	<u>20,000</u>		<u>20,000</u>

Q4) A firm whose cost of capital is 10%.
 & considering two mutually exclusive proposals X and Y. The details of which are as follows:

Particulars	Proposal X	Proposal Y
Initial Investment	15,00,000	15,00,000
Cash inflows for		
1 st Year	1,50,000	6,00,000
2 ⁿ Year	2,50,000	6,50,000
3 rd Year	3,50,000	5,50,000
4 th Year	5,50,000	4,50,000
5 th Year	4,00,000	3,50,000

Calculate NPV @ 10%. CPV factors 0.909, 0.826, 0.751, 0.683 & 0.621 for respective 5 year
 (10 marks)

Marking Schemes:

- NPV of proposal X [5 marks]
- NPV of proposal Y [5 marks]

Model Answer:

Model Answer & Marking Scheme: RIMRD

Computation of Net Present Value

Year	10% CC	Proposal X cash Inflow	Proposal X Disc- ounted CI	Proposal 'Y' cash Inflow	Proposal 'Y' Disc- ounted CI
1	0.909	1,50,000	1,36,350	6,00,000	5,45,400
2	0.826	2,50,000	2,06,500	6,50,000	5,36,900
3	0.751	3,50,000	2,62,850	5,50,000	4,13,050
4	0.683	5,50,000	3,75,650	4,50,000	3,07,350
5	0.621	4,00,000	2,48,400	3,50,000	2,17,350
Total Present value of CI			12,29,750		20,20,050
- Initial Investment			15,00,000		15,00,000
Net Present value			-270,250		5,20,050

Q5) A proforma cost sheet of a company provides the following particulars:

Elements of Cost	Amount per Unit
Raw material	80
Direct Labour	30
Overheads	60
Total Cost	170
Profit	30
Selling Price	200

The following further particulars are available

- (a) Raw materials are in stock for one month
- (b) Credit allowed by supplier is one month
- (c) Credit allowed to customers is two months
- (d) lag in payment of wages $1\frac{1}{2}$ weeks.

- ③ Lag is payment of overheads one month
- ④ Materials are in process for an average of half month (50% to be considered for labour & other overheads)
- ⑤ finished goods are in stock for an average of one month $\frac{1}{4}$ output is sold against cash.
- ⑥ Cash in hand & at bank is expected to be Rs. 25,000.

Prepare working capital needed to finance a level of activity of 1,04,000 units of product.

You may assume that production is carried on evenly throughout the year. Wages & overheads accrue similarly & a period of 4 weeks is equivalent to a month.

(10 marks)

Marking Scheme:

- Current Assets [4 marks]
- Current Liabilities [4 marks]
- Net Working Capital [2 marks]

Model Answer:

Statement showing the working capital Requirements

Particulars	Amount
(A) CURRENT ASSETS:	
Stock of Raw Materials [1,04,000 units * 80 per unit] * $\frac{1}{12}$	6,93,333
Stock of Work in Progress [Raw Material (1,04,000 * 80) * 0.5/12 Direct Labour (1,04,000 * 30) * 0.5/12 Overheads (1,04,000 * 60) * 0.5/12]	7,36,667
Stock of Finished Goods [1,04,000 * 170 * 1/12]	14,73,333
Debtors [1,04,000 * 200 * 2/12 * 3/4]	26,00,000
Cash at Bank	25,000
Total Current Assets	55,28,333

(B) CURRENT LIABILITIES	
Creditors [1,04,000 * 80 * 1/12]	6,93,333
Wages [1,04,000 * 30 * 1.5/52]	90,000
Overheads [1,04,000 * 60 * 1/12]	5,20,000
Total Current Liabilities	13,03,333
Net Working Capital [(A) - (B)]	42,25,000



**Rajgad Institute of Management Research &
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**Model Answers & Scheme of Marking
203 : Human Resource
Management**

An 'IQAC Cell' Initiative: January - April 2019





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Model Answers & Scheme of Marking

Subject Name **Human Resource Management**

Subject Code **203**

Semester **II**

Specialization **NA**

Faculty **Prof. Rohini D. Gujar**

Model Answer for Question Paper **SPPU December 2018**

Model Answer & Scheme of marking for Question paper: December 2018 SPPU

Q. 1) Discuss the nature and scope of HRM.

(10 Marks)

Marking Scheme:

- **Nature of HRM (5 Marks).**
 - **Scope of HRM (5 Marks)**
-

Model Answer:

Nature of Human Resource Management

Human Resource Management is a process of bringing people and organizations together so that the goals of each are met. The various features of HRM include:

1. HRM is based on certain principles and policies contribute to the achievement of organizational objectives.
2. HRM is a pervasive function – Human resource management is not specific to an individual department, rather it is a broader function and spread throughout the organization, it manages all type of people from lower level to top level departments of the organization.
3. HRM is people oriented – People or human resource is the core of all the activities of human resource management. Human resource management works with and for people. It brings people and organization together to achieve individual and organizational goals.
4. HRM is continuous activity – All factors of production are required to be continuously updated and improved to cope up with the changes and increased competition. Similarly, human resource also continuously trained, developed, or replaced to face the next level of competition. Hence, it is a continuous activity.
5. HRM is a part of management function.
6. HRM aims at securing maximum contribution.
7. HRM aims at optimum use of personnel power.

Scope of HRM : HRM is concerned with the 'people' dimensions of the organizations. The organizational objectives can be best attained by acquiring human resource, develop their skills, motivate them for high performance and ensure that they continue to maintain their commitment and loyalty towards the high performance. The scope of HRM covers all the activities in the working life of an employee.

The scope of HRM is described below:

i. Personnel Aspect:

Personnel aspect is concerned with human resource planning, job analysis, recruitment, selection, placement, induction, training and development, lay-off, retrenchment, compensation, incentives, morale and productivity, etc.

ii. Welfare Aspect:

Welfare aspect deals with organizational environment especially the working conditions and amenities such as canteen, crèches, first-aid, drinking water, lunch room etc. These are all intramural welfare facilities provided within the premises of the organization. Welfare aspect is also concerned with extra mural welfare facilities such as transportation, medical assistance, education, safety, and recreation facilities.

iii. Industrial Relations Aspect:

Industrial relations aspect focuses on union management relations, joint consultation, collective bargaining, grievances, and dispute settlement mechanisms for example conciliation, arbitration and adjudication (labour court, industrial tribunal and the national tribunal).

The activities that come under the purview of HRM are:

- 1. Human Resource Planning** – This element involves determining the organisations human resource needs, strategies, and philosophies. It involves analysis of the internal and external factors like skills needed, number of vacancies, trends in the labour market etc.
- 2. Recruitment and Selection** – Recruitment is concerned with the developing the pool of candidates in the line with the human resources plan. Selection is the process of matching people and their career needs and capabilities with the jobs and career paths. It ends with the ultimate hiring of the candidate.
- 3. Training and Development** – This involves identification of individual potentialities and helping in the development of key competencies through planned learning process. The competencies are to be developed to enable individuals to perform current as well as future jobs.
- 4. Organisational Development** – This element ensures healthy inter and intra unit relationships. It helps work groups in initiating and managing change. The organisational development also falls under the purview of human resource management.
- 5. Career Development** – It is assuring an alignment of the management. It is a process of achieving an optional match of individual and organisational needs.
- 6. Job Design** – This element defines the tasks, authority, and systems of a job. It also ensures integration of individual jobs across the unit.
- 7. Performance Management Systems** – The performance management systems ensure linkages between individual and organisational goals. It aims at ensuring that every individual's efforts and actions support the goals of the organisation.
- 8. Compensation and Benefits** – This element focuses on a fair, consistent, and equitable compensation and benefits to the work force.

9. Employee Assistance – The focus of this element is to provide problem solving or counseling to individual employees. The purpose is to help employees in overcoming the personal and job related problems.

10. Labour Relations – This variable assures healthy union – organisation relationship. It aims at creating an environment of industrial peace and harmony.

11. HR Research and Information Systems and Audit – This element ensures a reliable and full proof HR information base. It not only evaluates personnel policies and programmes but also highlights the need and areas of change.

Q. 2) "HR strategy is to be closely linked with organisational strategies". Justify.
(10 Marks)

Marking Scheme:

- **Linkage of Organizational and HR strategies (5 strategies * 2 Marks).**

Model Answer:

The linkage of organizational/business strategies with human resource strategies known as best fit approach. It deals with the extent of alignment between the component of HR strategies of an organization, and the essential features of its business strategy. The best fit approach makes sure that the HR strategies are suitable to the different circumstances of the entire organization, together with culture, operational processes as well as external environment.

Strategic Alignment of HR

HR executives are sometimes left to deal with only administrative functions, such as recruitment, performance measurement, training and compensation. These processes are important, but on their own, they don't show how an organization should plan for the human resources to deliver on its plans and ambitions.

Empowering the HR department may add value to the organization's business strategy as it undertakes the functional activities in a manner that supports growth and success.

Delivering the Strategy

An effective HR strategy that has clear links to the business strategy can enhance the organization to align its activities better with its human resources. An HR department that understands the demands of your business strategy can help the organization stay on track.

Effective Training and Development

Organizations are affected by many external and internal factors that can change the nature of individual job roles and need for skill sets. An HR strategy linked to the organizational strategy is better placed to anticipate any such change.

Improved Recruitment and Retention

Employees who are supported and trained in their jobs tend to be happier and more productive. Moreover, organizations with a positive reputation face fewer hurdles to effective recruitment. These factors are important elements in understanding why HR strategy must link to organizational strategy.

HR Drives Strategy

HR strategy is at the center of an organization's overall capacity and capability. Having a clear concept of the employees and their different skills can help an organization have the required development and growth. Organizations see HR as a key driver of strategy and integral to their future success.

The idea of organizational performance includes both the 'What' and 'How' of achievement. There are various means to measure firm's performance, such as key performance indicators (KPIs), which are usually to do with financial results (profitability) or productivity. Measuring the "how" is more difficult as it relies on qualitative aspects of assessment of effectiveness.

The following four factors are the most important reasons why HRM should be linked with organizational performance –

Roles

People should have a clear idea of their as well as the roles of others in an organization. Every successful team has well-defined position for its members.

Everyone is aware of what he or she has to do, how to do it and how their performance can affect the organization.

In business, this means you need to have clear reporting structure. It is the duty of HRM to define and set rules for employees.

Rules

Having a clear set of behavioral expectations is important to establish that you're not contributing to the bad behavior as an employer. Setting clear and specific rules establishes a framework for spotting and addressing violations of behavioral standards.

Loosely defined general standards lead to violations. The result of such ambiguousness is often litigation. HRM plays a key role in defining the company standards and minimizing violations.

Consequences

It's necessary to clearly state the consequences for violations of behavioral standards. In addition, clear consequences help to ensure that options for dealing with violations are not limited. To establish the standards and violation consequences, it's essential to know ahead of time what employee actions require an immediate dismissal.

The HR is responsible for drawing these fine lines. Similarly, HR managers know what performance issues may qualify for a more progressive disciplinary approach, and they define the steps involved in such an approach. HRM thus plays a disciplinary role as well, which is indispensable for organizational performance.

Tools

Tools are vital not just to help avoid litigation, but also to diminish the duration of time it takes for the owner to deal with non-productive people issues instead of core business processes. Many small-business owners use attorneys and HR consultants on an a la carte basis to address such issues.

Whatever the approach, the key to success is to devote the time and resources it takes to develop a policy and practices strategy for your business. It is wise to invest in people of the organization because they build the organization. It's an investment that can provide huge dividends in terms of increased productivity and minimized litigation. Nonetheless, it is an essential component of your comprehensive people strategy and HRM is responsible for overall nurture and growth of this domain.

Q. 3) 'Human Resource Planning server as a link between HRM and the Business plans'. Evaluate the statement.
(10 Marks)

Marking Scheme:

- **Steps in Human Resource Planning (Steps 6 marks + Diagram 4 Marks).**
-

Model Answer:

HRP is basically the business process for ensuring that an organization has suitable access to talents and also to ensure future business success. It is basically the process of identifying the right person for the right job at the right time and at the right cost.

Therefore HRP server as a link between HRM & the Business Plans.

Below are the steps in HRP which shows the linkage between HRM & Business Plans/strategies,

1. Analyzing Organizational Objectives:

The objective to be achieved in future in various fields such as production, marketing, finance, expansion and sales gives the idea about the work to be done in the organization.

2. Inventory of Present Human Resources:

From the updated human resource information storage system, the current number of employees, their capacity, performance and potential can be analysed. To fill the various job requirements, the internal sources (i.e., employees from within the organization) and external sources (i.e., candidates from various placement agencies) can be estimated.

3. Forecasting Demand and Supply of Human Resource:

The human resources required at different positions according to their job profile are to be estimated. The available internal and external sources to fulfill those requirements are also measured. There should be proper matching of job description and job specification of one particular work, and the profile of the person should be suitable to it.

4. Estimating Manpower Gaps:

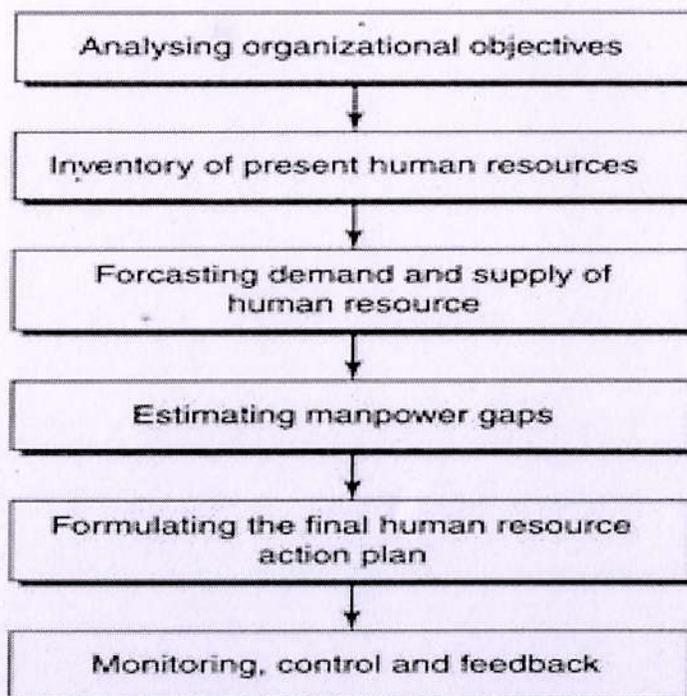
Comparison of human resource demand and human resource supply will provide with the surplus or deficit of human resource. Deficit represents the number of people to be employed, whereas surplus represents termination. Extensive use of proper training and development programme can be done to upgrade the skills of employees.

5. Formulating the Human Resource Action Plan:

The human resource plan depends on whether there is deficit or surplus in the organization. Accordingly, the plan may be finalized either for new recruitment, training, interdepartmental transfer in case of deficit of termination, or voluntary retirement schemes and redeployment in case of surplus.

6. Monitoring, Control and Feedback:

It mainly involves implementation of the human resource action plan. Human resources are allocated according to the requirements, and inventories are updated over a period. The plan is monitored strictly to identify the deficiencies and remove it. Comparison between the human resource plan and its actual implementation is done to ensure the appropriate action and the availability of the required number of employees for various jobs.



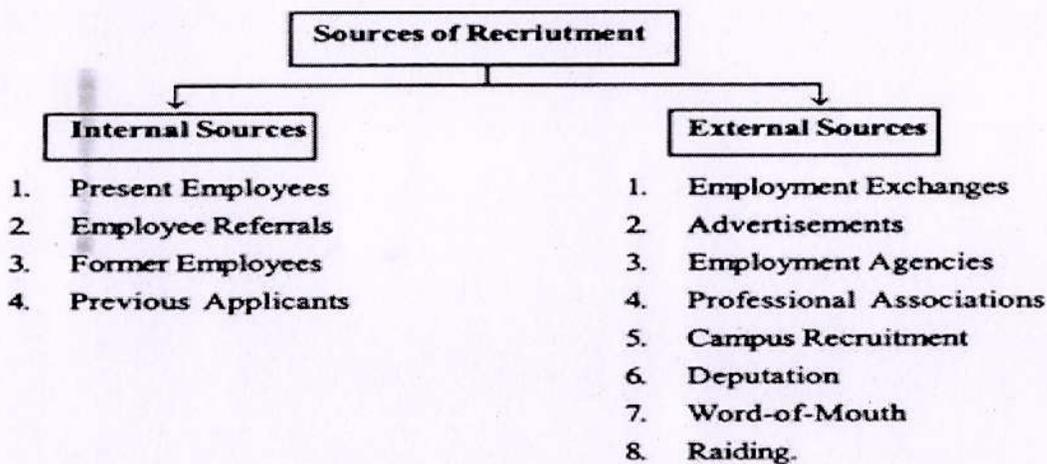
Q. 4) Discuss the various sources of internal and external recruitment.

(10 Marks)

Marking Scheme:

- **Internal sources of Recruitment (5 Marks).**
- **External sources of Recruitment (5 Marks).**

Model Answer: Recruitment is a process of searching and obtaining applicants for jobs. The eligible & suitable candidates required for a particular job are available through various sources, which are as follows,



Internal Sources:

Present Employees

Promotions and transfers from among the present employees can be a good source of recruitment. Promotion to higher positions has several advantages. They are:- (i) it is good public relations; (ii) it builds morale; (iii) it encourages competent individuals who are ambitious; (iv) it improves the probability of a good selection, since information on the individual's performance is readily available; (v) it is cheaper than going outside to recruit; (vi) those chosen internally are familiar with the organization; and (vii) when carefully planned, promoting from within can also act as a training device for developing middle-level and top-level managers.

Employee Referrals

This can be a good source of internal recruitment. Employees can develop good prospects for their families and friends by acquainting them with the advantages of a job with the company, furnishing cards of introduction, and even encouraging them to apply.

Former Employees

Former employees are also an internal source of applicants. Some retired employees may be willing to come back to work on a part-time basis or may recommend someone who would be interested in working for the company. Sometimes, people who have left the company for some reason or the other are willing to come back and work. Individuals who left for other jobs, might be willing to come back for higher emoluments. An advantage with this source is that the performance of these people is already known.

Previous Applicants

Although not truly an internal source, those who have previously applied for jobs can be contacted by mail, a quick and inexpensive way to fill an unexpected opening. Although 'walk-ins' are likely to be more suitable for filling unskilled and semi-skilled jobs, some professional openings can be filled by applicants to previous jobs.

External Sources :

Employment Exchanges

The major functions of the exchanges are to increase the pool of possible applicants and to do preliminary screening. Thus, employment exchanges act as a link between the employers and the prospective employees. These offices are particularly useful in recruiting blue-collar, white-collar and technical workers.

Advertisements

These constitute a popular method of seeking recruits as many recruiters prefer advertisements because of their wide reach. Want ads describe the job and the benefits, identify the employer, and tell those who are interested and how to apply.

They are the most familiar form of employment advertising. For highly specialized recruits, advertisements may be placed in professional/business journals. Job Portals, Company web-site & Newspapers are the most common medium.

Employment Agencies

Management Consultants and The Search House are some among the numerous recruiting agencies. These and other agencies in the profession are retained by organizations for recruiting and selecting managerial and executive personnel. Consultants are useful in as much as they have nation-wide contacts and lend professionalism to the hiring process. They also keep prospective employer and the employee anonymous.

Contractors/ Professional Associations

Contractors are used to recruit casual workers. The names of the workers are not entered in the company records and, to this extent, difficulties experienced in maintaining permanent workers are avoided.

Campus Recruitment

Colleges, universities, research laboratories, sports fields and institutes are fertile ground for recruiters, particularly the institutes. In fact, in some companies, recruiters are bound to recruit a given number of candidates from prestigious institutes every year. The IIMs are an important source for recruiting management trainees.

E-Recruiting

E-recruiting involves screening candidates electronically, directing potential hires to a special website for online skill assessment, conducting background checks over the Internet, interviewing candidates via videoconferencing, and managing the entire process with web-based software.

Walk-ins

The most common and least expensive approach for candidates is direct applications, in which job seekers submit unsolicited application letters or resumes. Direct applications can also provide a pool of potential employees to meet future needs.

Q. 5) Critically examine the methods organization adopts for their on-the-job and off-the-job training programs.
(10 Marks)

Marking Scheme:

- **On-the-Job Training Programs (5 Marks).**
 - **Off-the-Job Training Programs (5 Marks).**
-

Model Answer:

On-the-job training Methods:

Under these methods new or inexperienced employees learn through observing peers or managers performing the job and trying to imitate their behaviour. Some of the commonly used methods are:

1. Coaching:

Coaching is a one-to-one training. It helps in quickly identifying the weak areas and tries to focus on them. It also offers the benefit of transferring theory learning to practice. The biggest problem is that it perpetuates the existing practices and styles. In India most of the scooter mechanics are trained only through this method.

2. Mentoring:

The focus in this training is on the development of attitude. It is used for managerial employees. Mentoring is always done by a senior inside person. It is also one-to-one interaction, like coaching.

3. Job Rotation:

It is the process of training employees by rotating them through a series of related jobs. Rotation not only makes a person well acquainted with different jobs, but it also alleviates boredom and allows to develop rapport with a number of people. Rotation must be logical.

4. Job Instructional Technique (JIT):

It is a Step by step (structured) on the job training method in which a suitable trainer (a) prepares a trainee with an overview of the job, its purpose, and the results desired, (b) demonstrates the task or the skill to the trainee, (c) allows the trainee to show the demonstration on his or her own, and (d) follows up to provide feedback and help. The trainees are presented the learning material in written or by learning machines through a series called 'frames'. This method is a valuable tool for all educators (teachers and trainers). It helps us:

- a. To deliver step-by-step instruction
- b. To know when the learner has learned
- c. To be due diligent (in many work-place environments)

5. Apprenticeship:

Apprenticeship is a system of training a new generation of practitioners of a skill. This method of training is in vogue in those trades, crafts and technical fields in which a long period is required for gaining proficiency. The trainees serve as apprentices to experts for long periods. They have to work in direct association with and also under the direct supervision of their masters.

The object of such training is to make the trainees all-round craftsmen. It is an expensive method of training. Also, there is no guarantee that the trained worker will continue to work in the same organisation after securing training. The apprentices are paid remuneration according the apprenticeship agreements.

6. Understudy:

In this method, a superior gives training to a subordinate as his understudy like an assistant to a manager or director (in a film). The subordinate learns through experience and observation by participating in handling day to day problems. Basic purpose is to prepare subordinate for assuming the full responsibilities and duties.

B. Off-the-job Training Methods:

Off-the-job training methods are conducted in separate from the job environment, study material is supplied, there is full concentration on learning rather than performing, and there is freedom of expression. Important methods include:

1. Lectures and Conferences:

Lectures and conferences are the traditional and direct method of instruction. Every training programme starts with lecture and conference. It's a verbal presentation for a large audience. However, the lectures have to be motivating and creating interest among trainees. The speaker must have considerable depth in the subject. In the colleges and universities, lectures and seminars are the most common methods used for training.

3. Simulation Exercises:

Simulation is any artificial environment exactly similar to the actual situation. There are four basic simulation techniques used for imparting training: management games, case study, role playing, and in-basket training.

(a) Management Games:

Properly designed games help to ingrain thinking habits, analytical, logical and reasoning capabilities, importance of team work, time management, to make decisions lacking complete information, communication and leadership capabilities. Use of management games can encourage novel, innovative mechanisms for coping with stress.

Management games orient a candidate with practical applicability of the subject. These games help to appreciate management concepts in a practical way. Different games are used for training general managers and the middle management and functional heads – executive Games and functional heads.

(b) Case Study:

Case studies are complex examples which give an insight into the context of a problem as well as illustrating the main point. Case Studies are trainee centered activities based on topics that demonstrate theoretical concepts in an applied setting.

A case study allows the application of theoretical concepts to be demonstrated, thus bridging the gap between theory and practice, encourage active learning, provides an opportunity for the development of key skills such as communication, group working and problem solving, and increases the trainees' enjoyment of the topic and hence their desire to learn.

(c) Role Playing:

Each trainee takes the role of a person affected by an issue and studies the impacts of the issues on human life and/or the effects of human activities on the world around us from the perspective of that person.

It emphasizes the “real- world” side of science and challenges students to deal with complex problems with no single “right” answer and to use a variety of skills beyond those employed in a typical research project.

In particular, role-playing presents the student a valuable opportunity to learn not just the course content, but other perspectives on it. The steps involved in role playing include defining objectives, choose context & roles, introducing the exercise, trainee preparation/research, the role-play, concluding discussion, and assessment. Types of role play may be multiple role play, single role play, role rotation, and spontaneous role play.

(d) In-basket training:

In-basket exercise, also known as in-tray training, consists of a set of business papers which may include e-mail SMSs, reports, memos, and other items. Now the trainer is asked to prioritise the decisions to be made immediately and the ones that can be delayed.

4. Sensitivity Training:

Sensitivity training is also known as laboratory or T-group training. This training is about making people understand about themselves and others reasonably, which is done by developing in them social sensitivity and behavioral flexibility. It is ability of an individual to sense what others feel and think from their own point of view.

It reveals information about his or her own personal qualities, concerns, emotional issues, and things that he or she has in common with other members of the group. It is the ability to behave suitably in light of understanding.

A group’s trainer refrains from acting as a group leader or lecturer, attempting instead to clarify the group processes using incidents as examples to clarify general points or provide feedback. The group action, overall, is the goal as well as the process.

5. Transactional Analysis:

It provides trainees with a realistic and useful method for analyzing and understanding the behavior of others. In every social interaction, there is a motivation provided by one person and a reaction to that motivation given by another person.

This motivation reaction relationship between two persons is known as a transaction. Transactional analysis can be done by the ego (system of feelings accompanied by a related set of behaviors states of an individual).



**Rajgad Institute of Management Research &
Development, Pune 43**

**Model Answers & Scheme of Marking
Decision Science (204)**

An 'IQAC Cell' Initiative: January - April 2019





Rajgad Dnyanpeeth's
**Rajgad Institute of Management
Research & Development, Pune-43**
Approved by AICTE, Recognized by DTE (Govt. of Maharashtra),
Affiliated to Savitribai Phule Pune University

Model Answers & Scheme of Marking

Subject Name **Decision Science**

Subject Code **204**

Semester **II**

Specialization **NA**

Faculty **Prof. Rohan P. Dahivale**

Model Answer for Question Paper **SPPU December 2018**

We drawn 4 lines but order of matrix is '5.' So we have to use Hungarian method matrix

	A	B	C	D	E	
1	04	09	05	00	01	
2	19	02	00	00	04	②
3	15	00	00	04	00	①
4	00	15	12	14	03	
5	01	04	05	07	00	
	③			④	⑤	

Here we drawn 5 lines so optimum matrix we got. Now capture zero in above matrix.

	A	B	C	D	E
1	4	9	5	0	1
2	19	2	0	0	4
3	15	0	0	4	0
4	0	15	12	14	3
5	1	4	5	7	0

Thus final assignment

$$1 \rightarrow D \Rightarrow 28$$

$$2 \rightarrow C \Rightarrow 28$$

$$3 \rightarrow B \Rightarrow 27$$

$$4 \rightarrow A \Rightarrow 22$$

$$5 \rightarrow E \Rightarrow 39$$

3

144

∴ Minimization value = 144 units.

Answer

Q.2] Simulation [10 marks]

Daily Demand	Probability	Cummulative Probability	Range
0	0.01	0.01	00 - 00
10	0.15	0.16	01 - 15
20	0.20	0.36	16 - 35
30	0.50	0.86	36 - 85
40	0.12	0.98	86 - 97
50	0.02	1.00	98 - 99

Simulation for next 10 days.

Random Numbers	Average Demand	Cake made	Stock situation
45	30	30	0
72	30	30	0
56	30	30	0
51	30	30	0
79	30	30	0
09	10	30	20 ← (30 - 10) ^{a)}
61	30	30	0
43	30	30	0
31	20	30	10 ← (30 - 20) ^{a)}
81	30	30	0
Total	270		

∴ Average Daily Demand = $\frac{270}{10} = 27$ units.

Answer

Q.3] Expected Moneytony value [10 marks]

		Good	Satisfactory	Poor	
S ₁	A	400	100	11	
S ₂	B	400	200	70	
S ₃	C	500	150	80	
S ₄	D	400	180	150	X 100
Probabilities		(0.6)	(0.2)	(0.2)	

Step A] EMV for each strategy

$$EMV(A) = 240 + 20 + 2 \cdot 2 = 262.2$$

$$EMV(B) = 240 + 40 + 14 = 294$$

$$EMV(C) = 300 + 30 + 16 = \boxed{346} \text{ --- ①}$$

$$EMV(D) = 240 + 36 + 30 = 306$$

∴ Largest E.M.V. corresponds to optimum strategy

Thus Product 'C' will be optimum choice.

Step B] Expected M.V. with perfect information.

E.M.V. with P.I.

$$= 300 + 40 + 30 = \boxed{370} \text{ --- ②}$$

Step C] Value of perfect information (② - ①)

$$\therefore 370 - 346 = \boxed{24} \text{ } \left. \vphantom{370 - 346} \right\} \underline{\text{ANSWER}}$$

Q.4] 3 machines problem [10 marks]

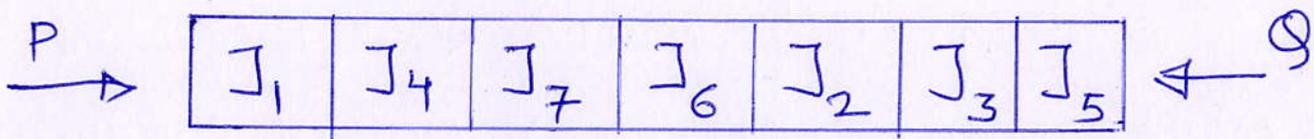
M ₁	3	8	7	4	9	8	7
M ₂	4	3	2	5	1	4	3
M ₃	6	7	5	11	5	6	12
Jobs	J ₁	J ₂	J ₃	J ₄	J ₅	J ₆	J ₇

Solution :- Converting 3 machines into imaginary 2 machines.

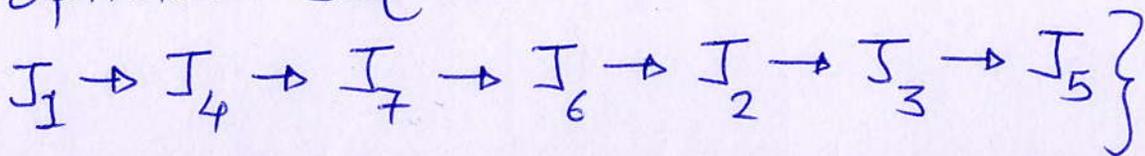
M/C	P (M ₁ +M ₂) =	7	11	9	9	10	12	10
-----	---------------------------------------	---	----	---	---	----	----	----

M/C	Q (M ₂ +M ₃) =	10	10	7	16	6	10	15
		J ₁	J ₂	J ₃	J ₄	J ₅	J ₆	J ₇

Finding optimum sequence.



∴ optimum sequence is



Answer 1

Table for idle time

Jobs	M ₁		M ₂		M ₃		Idle time		
	T _{in}	T _{out}	T _{in}	T _{out}	T _{in}	T _{out}	M ₁	M ₂	M ₃
J ₁	0	3	3	7	7	13	0	3	7
J ₄	3	7	7	12	13	24	0	0	0
J ₇	7	14	14	17	24	36	0	2	0
J ₆	14	22	22	26	36	42	0	5	0
J ₂	22	30	30	33	49	49	0	4	0
J ₃	30	37	37	39	49	54	0	4	0
J ₅	37	46	46	47	54	59	13	19	0

Thus

Total elapsed time = 59 units.

Total idle time

- 1) For MIC M₁ = 13 units
- 2) For MIC M₂ = 37 units
- 3) For MIC M₃ = 07 units

Answer 2

Q.5] a) Probability [5 marks]

Tickets 1 to 20 numbers.

Sample space $\{1, 2, 3, \dots, 18, 19, 20\} = 20$

Event 1 = multiple of 3

$$S_1 = \{3, 6, 9, 12, 15, 18\} = 6$$

Event 2 = multiple of 7

$$S_2 = \{7, 14\} = 2$$

• Number is multiple of 3

$$\therefore P(3) = \frac{m}{n} = \frac{6}{20} = \frac{3}{10} = 0.3 \text{ --- (1)}$$

• Number is multiple of 7

$$\therefore P(7) = \frac{m}{n} = \frac{2}{20} = \frac{1}{10} = 0.1 \text{ --- (2)}$$

• Number is multiple of 3 or 7

$$\text{as } P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$\therefore P(3 \text{ or } 7) = \frac{3}{10} + \frac{1}{10} - 0$$

$$= \boxed{0.4}$$

\therefore Number is multiple of 3 or 7 then } Answer
probability is 0.4

b) Cards Probability [5 marks]

A card is drawn from 52 cards

• Event = Ace card

$$\therefore P(\text{Ace}) = \frac{m}{n} = \frac{4}{52} = \frac{1}{13}$$

• Event = Not diamond

$$\therefore P(\text{Not Diamond}) = 1 - P(\text{Diamond})$$

$$\begin{aligned} \text{(Not Theorem)} & \quad \text{By} \\ & = 1 - \left[\frac{m}{n} \right] = 1 - \left[\frac{13}{52} \right] \end{aligned}$$

$$= 1 - (0.25)$$

$$= 0.75 \text{ or } \frac{3}{4}$$

\therefore Probability of Ace = $\frac{1}{13}$

\therefore Probability of Not Diamond = $\frac{3}{4}$ } Answer

★ All the best ★



**Rajgad Institute of Management Research &
Development, Pune 43**

**Model Answers & Scheme of Marking
Operations & Supply Chain
Management (205)**

An 'IQAC Cell' Initiative: January - April 2019





Rajgad Dnyanpeeth's
**Rajgad Institute of Management
Research & Development, Pune-43**
Approved by AICTE, Recognized by DTE (Govt. of Maharashtra),
Affiliated to Savitribai Phule Pune University

Model Answers & Scheme of Marking

Subject Name **Operations & Supply Chain
Management**

Subject Code **205**

Semester **II**

Specialization **NA**

Faculty **Prof. Rohan P. Dahivale**

Model Answer for Question Paper **SPPU December 2018**

Model Answer & Scheme of marking for Question paper: December 2018 SPPU

Q. 1) Define Operations Management. Explain the evolution from production to operations management (10 Marks)

Marking Scheme:

- **Define Operations Management (2 Marks).**
 - **Evolution from production to operations management (8 Marks)**
-

Model Answer:

Definition of Operations Management:

According to Ray Wild, 'Operations management is concerned with the design and operations of systems for manufacture, transport, supply or service.'

In other words, it deals with an operating system which is a configuration of resources combined for the provision of goods and services. The operating system consists of manufacture, transport, supply and service.

Evolution from production to operations management:

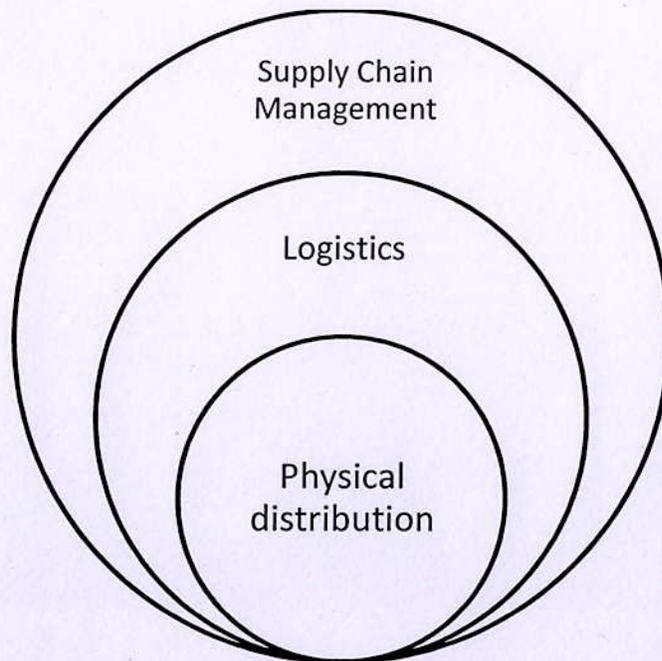
For over two centuries, operations and production management has been recognized as an important factor in a country's economic growth.

The traditional view of manufacturing management began in eighteenth century when Adam Smith recognized the economic benefits of specialization of labor. He recommended breaking of jobs down into subtasks and recognizes workers to specialized tasks in which they would become highly skilled and efficient.

In the early twentieth century, F.W. Taylor implemented Smith's theories and developed scientific management. From then till 1930, many techniques were developed prevailing the traditional view.

Production management becomes the acceptable term from 1930s to 1950s. As F.W. Taylor's works become more widely known, managers developed techniques that focused on economic efficiency in manufacturing. Workers were studied in great detail to eliminate wasteful efforts and achieve greater efficiency. At the same time, psychologists, socialists and other social scientists began to study people and human behavior in the working environment. In addition, economists, mathematicians, and computer socialists contributed newer, more sophisticated analytical approaches.

With the 1970s emerge two distinct changes in our views. The most obvious of these, reflected in the new name operations management was a shift in the service and manufacturing sectors of the economy. As service sector became more prominent, the change from 'production' to 'operations' emphasized the broadening of our field to service organizations. The second, more suitable change was the beginning of an emphasis on synthesis, rather than just analysis, in management practices.



Q. 2) Write the 'Job Production' and 'Batch Production' with example
(10 Marks)

Marking Scheme:

- **Note on Job Production (4 Marks).**
- **Note on Batch Production (4 Marks).**
- **Examples of Each (2 Marks)**

Model Answer:

Job Production

Job production, sometimes called jobbing or one-off production, involves producing custom work, such as a one-off product for a specific customer or a small batch of work in quantities usually less than those of mass-market products. Together with batch production and mass production (flow production) it is one of the three main production methods.

Job production can be classical craft production by small firms (making railings for a specific house, building/repairing a computer for a specific customer, making flower arrangements for a specific wedding etc.), but large firms use job production, too, and the products of job production are often interchangeable, such as machined parts made by a job shop.

Fabrication shops and machine shops whose work is primarily of the job production type are often called job shops. The associated people or corporations are sometimes called jobbers.

Job production is, in essence, manufacturing on a contract basis, and thus it forms a subset of the larger field of contract manufacturing. But the latter field also

includes, in addition to jobbing, a higher level of outsourcing in which a product-line-owning company entrusts its entire production to a contractor, rather than just outsourcing parts of it.

Examples of Job Production:

- Designing and implementing an advertising campaign
- Auditing the accounts of a large public limited company
- Installing machinery in a factory
- Building the bridge

Batch Production

Batch production is a technique used in manufacturing, in which the object in question is created stage by stage over a series of workstations, and different batches of products are made. Together with job production (one-off production) and mass production (flow production or continuous production) it is one of the three main production methods.

Batch production is most common in bakeries and in the manufacture of sports shoes, pharmaceutical ingredients, purifying water, inks, paints and adhesives. In the manufacture of inks and paints, a technique called a color-run is used.

A color-run is where one manufactures the lightest color first, such as light yellow followed by the next increasingly darker color such as orange, then red and so on until reaching black and then starts over again.

Batch Production Examples:

- Baked goods.
- Computer chips.
- Electrical goods.

Q. 3) Define the concept of 'Forecasting'. Explain the 'Forecasting' as a planning Tool. (10 Marks)

Marking Scheme:

- Definition of forecasting (2 Marks).
 - Description of forecasting as a planning tool (8 Marks).
-

Model Answer:

Definition of forecasting

Forecasting is the process of making predictions of the future based on past and present data and most commonly by analysis of trends. A commonplace example might be estimation of some variable of interest at some specified future date. Prediction is a similar, but more general term.

Demand Forecasting as a Planning Tool

1. Demand forecasting is the art and science of forecasting customer demand to drive holistic execution of such demand by corporate supply chain and business management.
2. Demand forecasting involves techniques including both informal methods, such as educated guesses, and quantitative methods, such as the use of historical sales data and statistical techniques or current data from test markets.
3. Demand forecasting may be used in production planning, inventory management, and at times in assessing future capacity requirements, or in making decisions on whether to enter a new market.

4. Demand forecasting is predicting future demand for the product. In other words, it refers to the prediction of a future demand for a product or a service on the basis of the past events and prevailing trends in the present.

Demand Forecasting is a planning tool that helps management in its attempts to cope with the uncertainty of the future, relying mainly on data from the past and present and analysis of trends.

Forecasting starts with certain assumptions based on the management's experience, knowledge, and judgment. These estimates are projected into the coming months or years using one or more techniques such as Box-Jenkins models, Delphi method, exponential smoothing, moving averages, regression analysis, and trend projection.

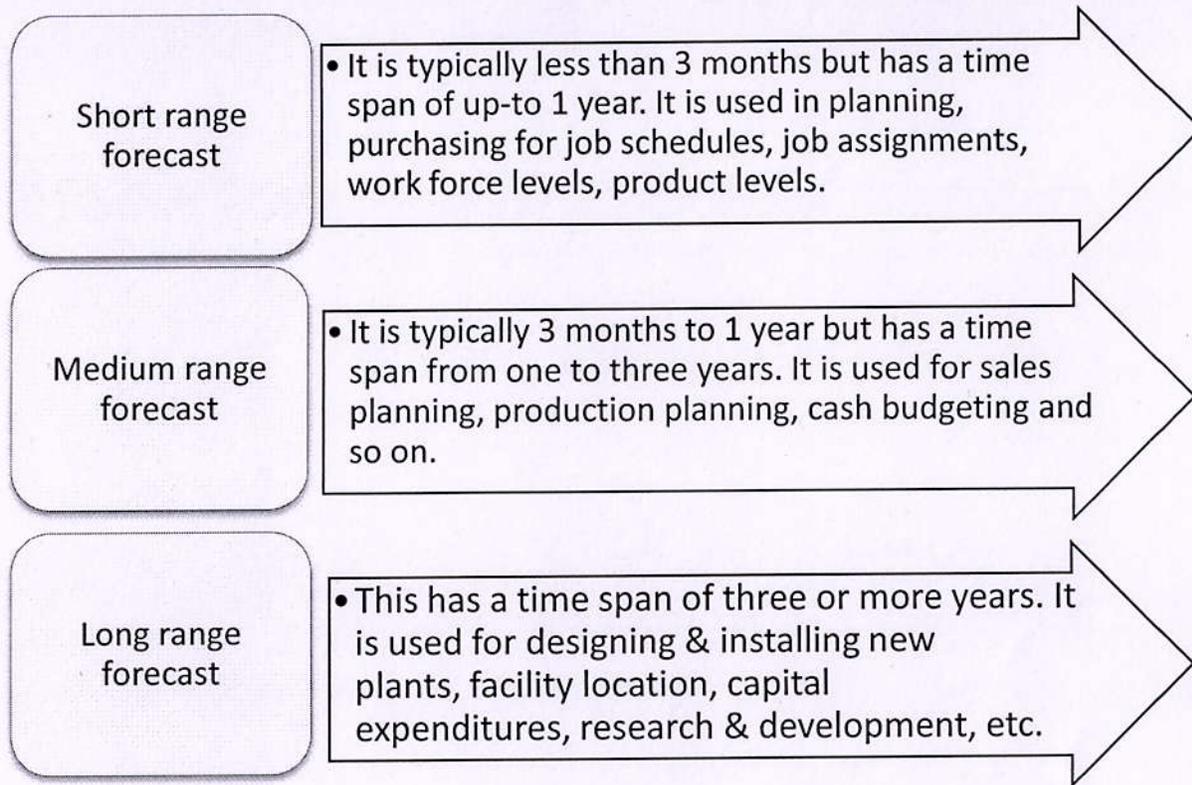
Since any error in the assumptions will result in a similar or magnified error in forecasting, the technique of sensitivity analysis is used which assigns a range of values to the uncertain factors (variables).

Forecasting on time horizon

Business forecasts are classified according to period, time and use. There are long term forecasts as well as short term forecasts. Operation managers need long range forecasts to make strategic-decisions about products, processes and facilities.

They also need short term forecasts to assist them in making decisions about production issues that span, only few weeks. Forecasting forms an integral part of planning and decision making, production managers must be clear about the horizon of forecasts.

The three divisions of forecast are short range forecast, medium range forecast and long range forecast.



- **Medium and Long range Forecasts** deal with more comprehensive issues and support management decisions regarding design and the development of new products, plants and processes.
- **Short range forecasts** tend to be more accurate than the long range forecasts.

Q. 4) Explain the inventory control Techniques :
a) ABC Analysis and
b) GOLF analysis. (10 Marks)

Marking Scheme:

- **Description of ABC analysis (5 Marks).**
 - **Description of GOLF analysis (5 Marks).**
-

Model Answer:

ABC Analysis

ABC analysis (or Selective Inventory Control) is an inventory categorization technique. ABC analysis divides an inventory into three categories-

- ✓ "A items" with very tight control and accurate records,
- ✓ "B items" with less tightly controlled and good records,
- ✓ "C items" with the simplest controls possible and minimal records.

The ABC analysis provides a mechanism for identifying items that will have a significant impact on overall inventory cost, while also providing a mechanism for identifying different categories of stock that will require different management and controls.

The ABC analysis suggests that inventories of an organization are not of equal value. Thus, the inventory is grouped into three categories (A, B, and C) in order of their estimated importance.

'A' items are very important for an organization. Because of the high value of these 'A' items, frequent value analysis is required. In addition to that, an

organization needs to choose an appropriate order pattern (e.g. 'Just- in- time') to avoid excess capacity.

'B' items are important, but of course less important than 'A' items and more important than 'C' items. Therefore, 'B' items are intergroup items.

'C' items are marginally important.

ABC analysis categories

There are no fixed thresholds for each class, different proportion can be applied based on objective and criteria. ABC Analysis is similar to the Pareto principle in that the 'A' items will typically account for a large proportion of the overall value but a small percentage of the number of items.

Examples of ABC class are

- ✓ 'A' items – 20% of the items accounts for 70% of the annual consumption value of the items.
- ✓ 'B' items - 30% of the items accounts for 25% of the annual consumption value of the items.
- ✓ 'C' items - 50% of the items accounts for 5% of the annual consumption value of the items.

Distribution of ABC class		
ABC class	Number of items	Total amount required
A	10%	70%
B	20%	20%
C	70%	10%
Total	100%	100%

Splitting items in A, B and C classes are relatively arbitrary. This grouping only represents a rather straightforward interpretation of the Pareto principle. In practice, sales volume is not the only metric that weighs the importance of an item. Margin but also the impact of a stock-out on the business of the client should also influence the inventory strategy.

GOLF Analysis

GOLF stands for Government, Ordinary, Local & Foreign analysis

G	Government
O	Ordinary
L	Local
F	Foreign

This analysis classifies inventory based on location & sources of the inventory items.

G	Government	Items that are supplied by Government only
O	Ordinary	Items that are supplied by ordinary suppliers
L	Local	Items that are locally available in local market
F	Foreign	Items that are locally available in foreign market

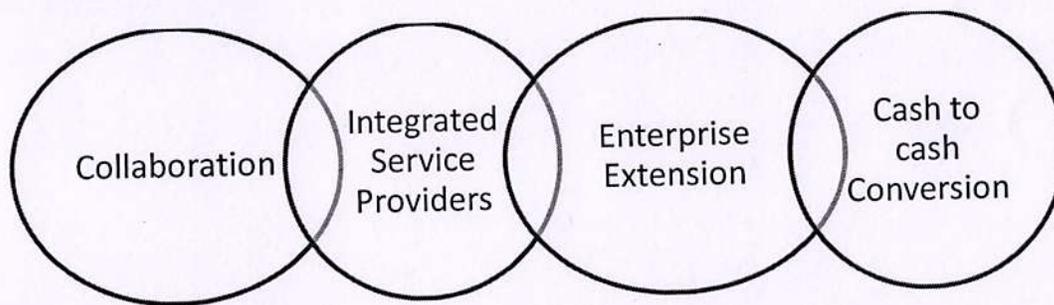
Q. 5) Explain key issues in SCM - Collaboration, Enterprise Extension, Responsiveness and Cash To Cash Conversion (10 Marks)

Marking Scheme:

- Description of Collaboration as key issue in SCM (2.5 Marks).
- Description of Enterprise Extension as key issue in SCM (2.5 Marks).
- Description of Responsiveness as key issue in SCM (2.5 Marks).
- Description of Cash To Cash Conversion in SCM (2.5 Marks).

Model Answer:

Key Issues in SCM



Collaboration

Competition is positioned at top rank level in success of any effective supply chain implementation. Many competitors compete to retain their existing customers and to achieve customer loyalty.

This is possible with high degree of quality provisions by organization, which will be ultimate result of expertise in any areas.

Achieving high degree of expertise encourages collaboration among the firms. This collaboration may be of information, technology, innovative operating arrangements or physical activities like transportation, logistics, distribution, marketing etc. Collaboration can reduce or delete duplicity of work in a specialized manner.

Enterprise Extension

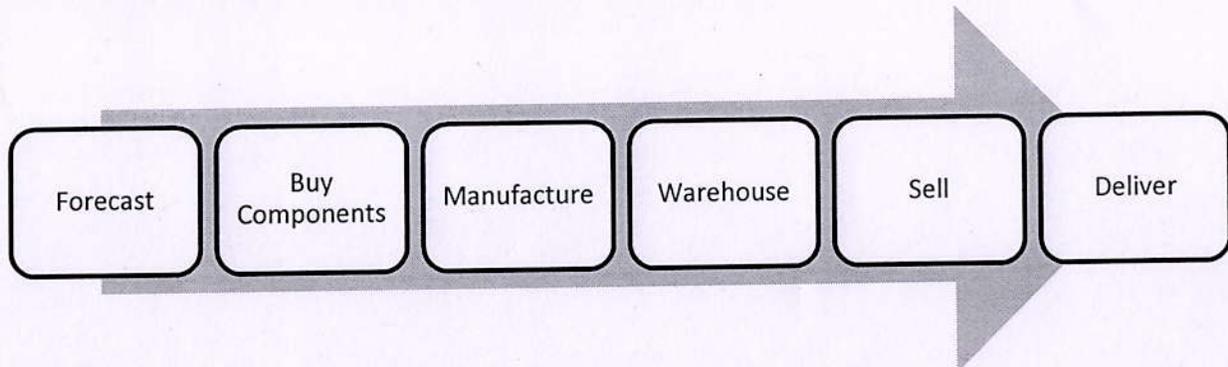
Upward or downward extension of the existing functional as well as strategic activities is enterprise extension. Enterprise extension focuses two core functions such as information sharing and process specialization.

Information sharing includes span of new product development, innovation to daily functions. Process sharing includes planning joint operations to eliminate non value addition work activities of the firm. Enterprise extension set up new challenges regarding risk sharing, conflict resolving and trust.

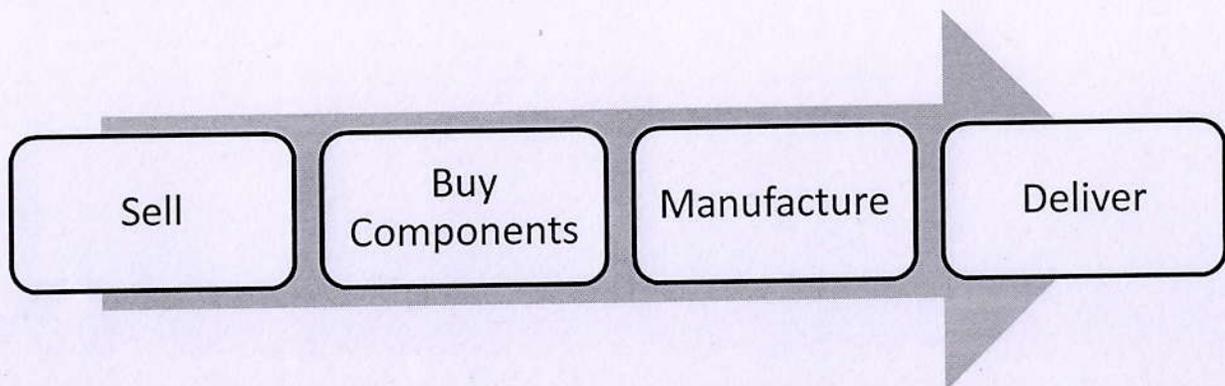
Responsiveness

Fundamental strategic thinking is essential for development of responsive business model which will have far reaching impact. To understand this term, two approaches are there for study.

Anticipatory Business Model (Traditional approach)



Responsive Business Model (Time based approach)

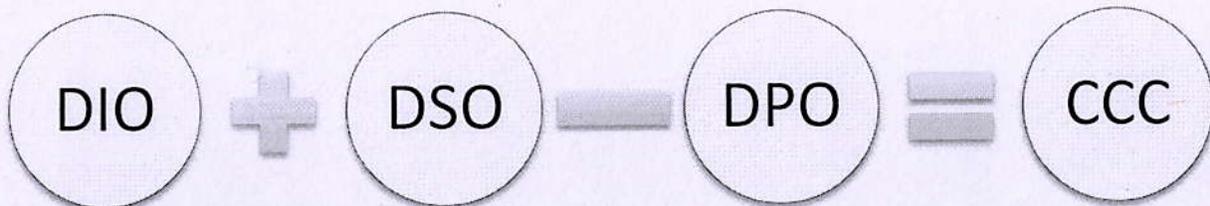


- Thus 'time' is the main difference between these two models.
- Sharing accurate and speedy information across supply chain can eliminate the activity of forecasting.
- Customer can get faster and customized products.
- Improvement in operational control can be achieved.
- Fewer steps are required to complete responsive process.
- Responsive time based approach (order to delivery) is more effective and efficient than Traditional approach (build to order).

Cash to Cash Conversion

- The Cash to Cash Conversion (CCC) is a metric that expresses the length of time, in days, that it takes for a company to convert resource inputs into cash flows.
- The CCC attempts to measure the amount of time each net input dollar is tied up in the production and sales process before it is converted into cash through sales to customers.
- This metric looks at the amount of time needed to sell inventory, the amount of time needed to collect receivables, and the length of time the company is afforded to pay its bills without incurring penalties.

The Cash to Cash Conversion is calculated as:

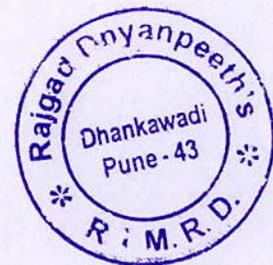


Where,

- DIO = days inventory outstanding
- DSO = days sales outstanding
- DPO = days payable outstanding
- CCC = Cash to Cash Conversion

Usually a company acquires inventory on credit, which results in account payable. A company can also sell products on credit, resulting in accounts receivable (A/R). Cash, therefore, is not a factor until the company pays the accounts payable and collects the accounts receivable.

The cash to cash conversion cycle (CCC) **measures the time between the cash outlay and the cash receipt**. The cash conversion cycle cannot be observed directly in cash flows, which are affected by financing and investment activities as well; rather, the cycle refers to the time span between a firm's disbursement and collection of cash. The calculation of cash conversion cycle involves several items from financial statements for a certain period of time (generally 365 days for a year or 90 days for a quarter).



**Rajgad Institute of Management Research &
Development, Pune 43**

**Model Answers & Scheme of Marking
Management Information System
(206)**

An 'IQAC Cell' Initiative: January 2019





Rajgad Dnyanpeeth's
**Rajgad Institute of Management
Research & Development, Pune-43**

Approved by AICTE, Recognized by DTE (Govt. of Maharashtra),
Affiliated to Savitribai Phule Pune University

Model Answers & Scheme of Marking

Subject Name **Management Information System**

Subject Code **206**

Semester **II**

Specialization **NA**

Name of Faculty **Dr. Prajakta Warale**

Model Answer for Question Paper **SPPU December 2018**

Q. 1) How does the information system supports various business strategies for competitive advantage(10 Marks)

Marking Scheme:

- **Define Information System and its nature (2 Marks).**
- **Explain the role of Information system for business in gaining competitive advantage. (8 Marks)**

Model Answer:

Definition of Information System and its nature:

According to Davis Olson, Information system is defined as an set of integrated user machine interface for collecting, storing, and processing data and for providing information support for decision making in the organization.

Information systems typically include a combination of software, hardware and telecommunication networks.

Role of Information system for business in gaining competitive:

Information systems are now playing a crucial role in data processing and decision making. When used correctly, they can positively impact an organization's overall performance and revenue.

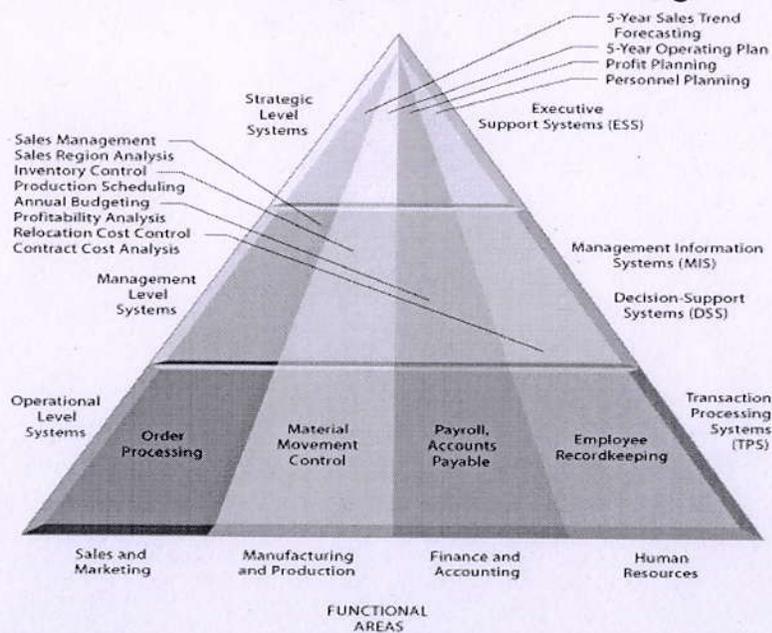
Firms with a competitive advantage over others typically have access to special resources that others do not or are able to use resources more efficiently, resulting in higher revenue growth, profitability, or productivity growth (efficiency), all of which ultimately in the long run translate into higher stock market valuations than their competitors.

There are four generic strategies used to manage competitive forces, each of which often is enabled by using information technology and systems:

1. **Low-cost leadership:** Use information systems to achieve the lowest operational costs and the lowest prices. For example, a supply chain management system can incorporate an efficient customer response system to directly link consumer behavior to distribution and production and supply chains, helping lower inventory and distribution costs.

2. **Product differentiation:** Use information systems to enable new products and services, or greatly change the customer convenience in using your existing products and services.
3. **Focus on market niche:** Use information systems to enable a specific market focus and serve this narrow target market better than competitors. Information systems support this strategy by producing and analyzing data for finely tuned sales and marketing techniques.
4. **Strengthen customer and supplier intimacy:** Use information systems to tighten linkages with suppliers and develop intimacy with customers. The firm can use information systems to facilitate direct access from suppliers to production schedules, and even permits suppliers to decide how and when to ship supplies to firm. This allows suppliers more lead time in producing goods.
5. The Internet has also created entirely new markets and formed the basis for thousands of new businesses. Internet technology is making it easy for rivals to compete on price .

The following diagram shows the use of Information system across all levels viz., Operational level, Management level and Strategic level.



In this manner organization can use information system effectively and efficiently to gain competitive advantage.

Q. 2) Explain in detail the major stages of SDLC. (10 Marks)

Marking Scheme:

- What is SDLC and its nature (2 Marks).
- SDLC Diagram (2 Marks)
- Explain the phases of SDLC (6 Marks)

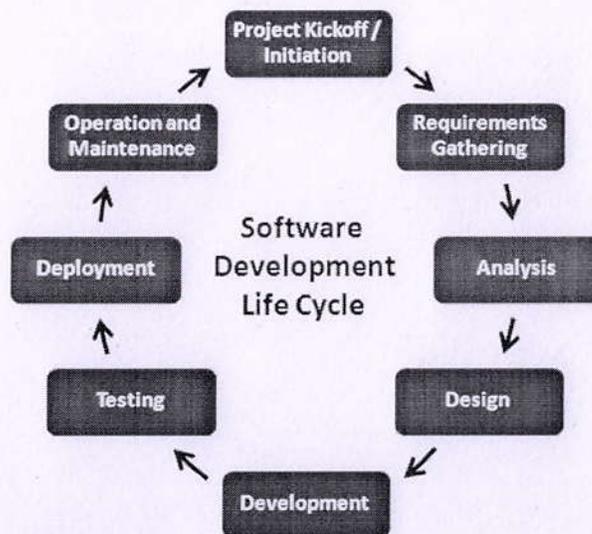
Model Answer:

SDLC and its nature:

SDLC stands for Software Development Life Cycle . It is nothing but a framework that defines the steps involved in the development of software at each phase. It covers the detailed plan for building, deploying and maintaining the software.

SDLC defines the complete cycle of development i.e. all the tasks involved in planning, creating, testing, and deploying a Software Product.

SDLC Diagram:



SDLC Phases are as follows:

1. Project Initiation
2. Requirements Gathering
3. Analysis
4. Design
5. Development
6. Testing

7. Implementation or deployment
8. Maintenance

Project Initiation Phase

This is the first stage in the Software Development Life Cycle where the project is initiated. In the case of enhancements to existing projects, the strengths and weaknesses of the current software are studied, objectives are defined, project team is formed and approval is taken from the Management.

Requirements Gathering Phase:

In this phase, system analyst gathers the requirement for development of system like which platform should be used, functional requirements, non-functional requirements such as technical requirements. The data or information is collected about user's expectation through frequent meetings with user and review of documents etc.

Analysis Phase

Once the requirement gathering is done, an analysis is done to check the feasibility of the development of a product. Different types of feasibility studies are conducted by system analyst such as technical feasibility, functional feasibility, economic feasibility, schedule feasibility etc. Once the requirement gathering is done then the SRS (Software Requirement Specification) document is prepared.

Design Phase: In this phase design of input, output, network, databases, application, system interfaces, user interfaces are designed from software requirement specification.

Development Phase:

Development means actual codification starts once the developer gets the Design document. The Software design is translated into source code. All the components of the software are implemented in this phase.

Testing Phase:

Once the software is complete, and it is deployed in the testing environment. The testing team starts testing the functionality of the entire system. Various types of tests are conducted such as user testing, system testing and integrated testing.

Implementation or deployment Phase:

Once the software testing phase is over and no bugs or errors left in the system then the final deployment process starts. Based on the feedback given by the

project manager, the final software is released and checked for deployment issues if any.

Maintenance Phase:

Once the system is deployed, maintenance is carried out for Bug fixing and upgradation.

Q. 3) Artificial Intelligence will change the phase of business in next decade. Comment on the statement with various examples.(10 Marks)

Marking Scheme:

- **What is Artificial Intelligence(2 Marks)**
- **Importance, Advantages (2 Marks)**
- **Applications of AI (6 Marks)**

Model Answer:

Definition of Artificial Intelligence (AI):

AI refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

Importance of AI:

Today, the amount of data that is generated, by both humans and machines, far outpaces humans' ability to absorb, interpret, and make complex decisions based on that data. Artificial intelligence forms the basis for all computer learning and is the future of all complex decision making. Applications of AI can be seen in everyday scenarios such as financial services fraud detection, retail purchase predictions, and online customer support interactions.

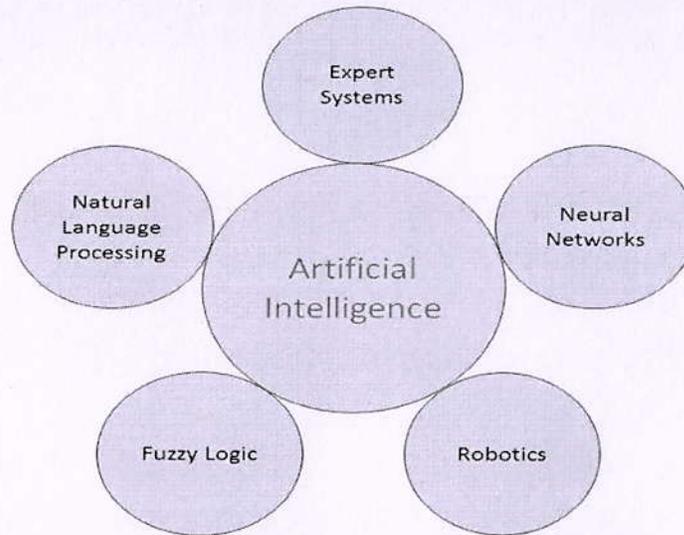


Diagram showing components of AI

AI systems are build with five components such as Expert System, Neural Networks, Robotics, Fuzzy Logic and Natural Language Processing

Advantages of AI:

Many complex business processes can be automated using AI. Work hours can be reduced significantly and human brains can be utilised in more creative aspects of the business such as brainstorming, Some advantages of AI are given below:

1. Informed Decision Making
2. Lead Generation
3. Better Customer Relations
4. Solve complex business problem

Applications of AI

• Market & Customer Analysis

- AI can play an enormous role when it comes to analysing market and your customers. Predictive analysis can be applied to the data and social media to build a better and enhanced product.
- AI-based systems also optimise marketing strategies and can bring down marketing expenditures
- Virtual Assistance: Companies deploy chatbots for various uses. The most important vertical is customer service.

• Process Automation

Robotics, fuzzy logic and neural networks can be used to automate business activities specially process automation. Smart algorithms are playing a crucial role in many industries like retail, hospitality, financial firms etc.

- **Big data analytics:**

Businesses have started unlocking data with the help of Big data analytics

- **AI Driven CRM:**

Consumers are influenced by so many other types of media, from TV commercials to social media platform. An effective AI-driven CRM can multitask and handle all your business functionalities.

- **Healthcare:** Virtual nursing has played a significant role in the healthcare industry. Patients reduce unnecessary visits to the hospital

- **Transportation (Self-Driven Vehicles)**

AI has introduced self-driven vehicles. Tesla released the Autopilot project in 2018. With the help of machine learning techniques

- **E-Shopping Malls:**

E-Malls such as Amazon, snap deal, Alibaba.com etc. collect and store information about the cities in the cloud. AI is used to solve the complex problems.

- **Education**

Artificial Intelligence developers have created virtual classrooms to improve the learning process, making it easier for the student to understand easily.

In this manner the AI is transforming the nature of businesses

Q. 4) In e-business small businesses can act as big. How these e-businesses are beneficial to organizations. (10 Marks)

Marking Scheme:

- **What is e-business (2 Marks).**
- **Importance and benefits (2 Marks)**
- **Applications of e-business for business use. (6 Marks)**

Model Answer:

e-business refers to electronic business. It is nothing but the conduct of business processes on the internet. These e-business processes include buying and selling

goods and services, servicing customers, processing payments, managing production control, collaborating with business partners etc.

In other words it is It refers to any method of utilizing digital information and communication technologies to support or streamline business processes – from preparation to implementation.

Importance of e-business:

The growth of e-business in recent decades has given rise to new business requirements. On the customer front, consumers expect organizations to offer self-service options for conducting transactions; they expect personalized experiences; and they want speedy, secure interactions.

As e-commerce has accelerated, companies have adopted stringent security protocols and tools, including encryption and digital certificates, to protect against hackers, fraud and theft. With the security built into browsers and with digital certificates are now available for individuals and companies from various vendors providing cybersecurity tools and technologies, cybersecurity has become ingrained in e-business.

Benefits of e-businesses

- Increased speed of transaction
- Global Reach
- Unlimited reach of customer
- 24 x 7 online business
- Cost savings with regards to investment in physical space, material (inventory), all other expenses aligned with physically opening store such as electricity, water, salaries to be paid to the staff and printing of bills, brochures etc.
- Enhanced business communication
- Reduce marketing cost
- Increases sales

Applications of e-business for business organisations : Given below are some of the some of the applications of e-business from business point of view.

E-advertisement: It is also known as online advertising it is a form of promotion that uses internet and world wide web to deliver marketing messages to attracts customers. Example: Banner ads, Social network advertising

E-Banking: Means any user with a personal computer and browser can get connected to his banks, website to perform any of the banking functions. In internet banking system the bank has a centralized data base i.e., web-enabled. example for E-Banking is ATM.

E-Learning: E-Learning comprises all forms of electronically supported learning and teaching's-Learning specially the computer and network skills and knowledge's-Learning applications include web-based learning, computer-based learning. **E-trading**

Online Shopping: Online shopping is the process whereby consumer directly buy goods or services from a sell in real time, without an intermediary services over the internet .

E-marketing: E-Marketing also known as Internet marketing, Online marketing, Web marketing. It is the marketing of products or services over the internet. Internet marketing is associated with several business models ie., B2C, B2B, C2C.

Online Trading:- An online trading community provides participants with a structured method for trading bantering (exchanging goods with goods) or selling goods and services.

Q. 5) How MIS is applied to financial Management? Discuss in detail its application, including accounting, query, decision analysis etc. (10 Marks)

Marking Scheme:

- **Application of MIS to Financial Management (2 Marks).**
- **Discuss application, including accounting, query, decision analysis etc. (8 Marks)**

Model Answer:

Management Information Systems (MIS) in Finance have been widely adopted both by corporations as well as governments. They are information systems with Rajgad Institute of Management Research & Development, Pune 43

capacity to maintain large data bases enabling organizations to store, organize and access financial information easily. A financial MIS provides financial information for managers to make daily decisions on operations within the organization. Most systems provide these functions:

- Integrate financial information from multiple sources
- Provide easy access to financial information in summarized form
- Enable financial analysis using easy-to-use tools
- Compare historic and current financial activity

A financial MIS often has a number of subsystems, depending on the type of organization. These include systems to analyze revenues, costs and profits, auditing systems for both internal and external purposes and systems to manage funds. A financial MIS can also be used to prepare reports for third parties, such as external auditors or shareholders.

Application, including accounting, query, decision analysis in Financial MIS:

These systems are primarily used for accounting operations and generation of financial reports.. Increasingly they are also used to support budgetary, planning and decision making processes. These systems are credited with increasing financial transparency, efficiency and accountability.

Accounting :

- **General Ledger**

The main use of a management information System (MIS) in finance is that it automatically updates all the transactions in the General Ledger. The General Ledger is the core component of all financial information systems. Financial transactions are simultaneously posted on the various accounts that comprise the organization's accounts.

- **Cash Management**

Cash flow management is an important use of MIS in Finance. Cash Management refers to the control, monitoring and forecasting of cash for financing needs. Use of

MIS in Finance helps companies track the flow of cash through accounts receivable and accounts payable accurately.

- **Information for budgeting, analysis and reporting**

The ideal financial management information system should provide information for budgeting, analysis and reporting. These are three important high-level functions within any business and can only be effectively carried out if the data produced is accurate and reliable, as would be expected from a properly functioning financial management information system.

- **Support policy decisions**

The ideal financial management information system is expected to support policy decisions in the organization. When policies are made, they should be backed up by accurate and reliable data, which should ultimately come from the FMIS.

In this manner Financial MIS can be used efficiently to manage all financial transactions of the firm.

