

MOCK TEST PAPER 1
INTERMEDIATE (IIPC): GROUP – II
PAPER – 7: INFORMATION TECHNOLOGY AND STRATEGIC MANAGEMENT
SECTION – A: INFORMATION TECHNOLOGY

ANSWERS

PART I: MULTIPLE CHOICE QUESTIONS (Answer 1-5 are based on case scenario)

1. (b) Failure to identify future business needs
2. (a) Electronic Calendaring
3. (c) Software as a Service
4. (b) Private Cloud
5. (b) Business to Employee e-Commerce
6. (d) Improve
7. (b) Community Cloud
8. (d) File Management
9. (d) Operational Level System
10. (b) Processing

Part II: Descriptive Answers

1. (a) The objectives of Business Process Automation are as follows:
 - ◆ **Confidentiality:** To ensure that data is only available to persons who have right to see the same;
 - ◆ **Integrity:** To ensure that no un-authorized amendments can be made in the data;
 - ◆ **Availability:** To ensure that data is available when asked for; and
 - ◆ **Timeliness:** To ensure that data is made available at the right time.
- (b) A **SmartPhone** is a mobile phone built on a mobile operating system, with more advanced computing capability connectivity than a feature phone. A smart phone could be considered to be the combination of the traditional PDA and cellular phone, with a bigger focus on the cellular phone part. These handheld devices integrate mobile phone capabilities with the more common features of a handheld computer or PDA. Smartphone's allow users to store information, e-mail and install programs, along with using a mobile phone in one device. A smart phone's features are usually more oriented towards mobile phone options than the PDA-like features. Modern smart phones also include high-resolution touch screens and web browsers that display standard web pages as well as mobile-optimized sites. High-speed data access is provided by Wi-Fi and mobile broadband.
2. (a) Mr. Sumit shall opt for the Bus Network at it is best suited under the current situation.

The **advantages** of bus networks are as follows:

 - There is no host computer or file server, which makes bus network reliable as well as easy to use and understand.
 - If one of the microcomputers fails, it will not affect the entire network.

- Requires the least amount of cable to connect the computers together and therefore is less expensive than other cabling arrangements.
- Is easy to extend. Two cables can be easily joined with a connector, making a longer cable for more computers to join the network.
- A repeater can also be used to extend a bus configuration.

The **disadvantages** of bus network are as follows:

- Heavy network traffic can slow a bus considerably since any computer can transmit at any time. But networks do not coordinate when information is sent. Computers interrupting each other can use a lot of bandwidth.
- Each connection between two cables weakens the electrical signal.
- The bus configuration can be difficult to troubleshoot. A cable break or malfunctioning computer can be difficult to find and can cause the whole network to stop functioning.

(b) The Components of Supply Chain Management (SCM) are as follows:

- (i) **Procurement/Purchasing**— This begins with the purchasing of parts, components, or services. Procurement must ensure that the right items are delivered in the exact quantities at the correct location on the specified time schedule at minimal cost. This means that procurement must concern itself with the determination of who should supply the parts, the components, or the services. It must address the question of assurance that these suppliers will deliver as promised. The key issue in procurement is how one goes about selecting and maintaining a supplier, which can be approached from two directions. The first concentrates on how a firm might evaluate a potential supplier whereas the second is how a firm evaluates those businesses that are already suppliers to an operation.
- (ii) **Operations** - The second major element of supply chain management system is operations. Having received raw materials, parts, components, assemblies, or services from suppliers, the firm must transform them and produce the products or the services that meet the needs of its consumers. It must conduct this transformation in an efficient and effective manner for the benefit of the supply chain management system.
- (iii) **Distribution** - The third element of the supply chain management system is distribution. Distribution involves several activities—transportation (logistics), warehousing, and customer relationship management (CRM). The first and most obvious is logistics—the transportation of goods across the entire supply chain.
- (iv) **Integration** - The last element of supply chain management is the need for integration. It is critical that all participants in the service chain recognize the entirety of the service chain. The impact of the failure to adopt a system-wide perspective—that is, examining the totality of the chain can significantly increase costs and destroy value.

3. (a) Various types of memory techniques used in computer systems are as follows:

- (i) **Internal memory:** This includes Processor Registers and Cache Memory.
 - **Processor Registers:** Registers are internal memory within CPU, which are very fast and very small.
 - **Cache Memory:** There is a huge speed difference between Registers and Primary Memory. In order to bridge these speed differences, we have cache memory. Cache (pronounced as cash) is a smaller, faster memory, which stores copies of the data from the most frequently used main memory locations so that Processor/Registers can access

it more rapidly than main memory. It is the property of locality of reference, which allows improving substantially the effective memory access time in a computer system.

(ii) **Primary Memory/Main Memory:** These are devices in which any location can be accessed by the computer's processor in any order. These are primarily of two types:

- **Random Access Memory (RAM):** It is volatile in nature means Information is lost as soon as power is turned off. This is Read Write memory. The information can be read as well as modified.
- **Read Only Memory (ROM):** This is non-volatile in nature wherein the contents remain even in the absence of power. Usually, these are used to store small amount of information for quick reference by CPU. Information can be read not modified. Generally used by manufacturers to store data & programs like translators that is used repeatedly.

(iii) **Secondary Memory:** CPU refers to the main memory for execution of programs, but these main memories are volatile in nature and hence cannot be used to store data on a permanent basis in addition to being small in storage capacity. The secondary memories are available in bigger sizes, thus programs and data can be stored on secondary memories. Secondary storage differs from primary storage in that it is not directly accessible by the CPU. The computer usually uses its input/output channels to access secondary storage and transfers the desired data using intermediate area in primary storage. Secondary storage does not lose the data when the device is powered down: it is non-volatile. The features of secondary memory devices are non-volatility (contents are permanent in nature), greater capacity (they are available in large size), greater economy (the cost of these is lesser compared to register and RAMs) and slow speed (slower in speed compared to registers or primary storage). Storage devices could differ amongst each other in terms of speed and access time, cost/ portability, capacity and type of access. Based on these parameters most common forms of secondary storage are: USB Pen Drives, Floppy drive, Hard Drive, CD, DVD, Blue ray Disks and Smart cards.

(iv) **Virtual Memory:** Virtual Memory is in fact not a separate device but an imaginary memory area supported by some operating systems (for example, Windows) in conjunction with the hardware. If a computer lacks the Random Access Memory (RAM) needed to run a program or operation, Windows uses virtual memory to compensate. Virtual memory combines computer's RAM with temporary space on the hard disk. When RAM runs low, virtual memory moves data from RAM to a space called a paging file. Moving data to and from the paging file frees up RAM to complete its work. Thus, Virtual memory is an allocation of hard disk space to help RAM.

(b) The suggestions to be considered while choosing appropriate delivery channels for information and product are as follows:

Information Delivery Channels

- ◆ **More than just the Intranet:** It is rarely sensible to have a goal of "increasing intranet usage". Fundamentally, staff will (and should) use whichever methods are easiest and most efficient to obtain information. Any attempt to move staff usage to the intranet away from existing information sources will almost certainly fail, unless the intranet is easier than the current methods. For example, it may be effective to put a notice on the notice board in a canteen (such as for field staff), rather than putting the same on intranet.
- ◆ **Understand staff needs and environment:** Job roles and work environments will have a major impact upon the suitability of delivery channels. This includes which systems do staff

use, their level of PC access, their amount of computer knowledge, and their geographic location. For example, there may only be a single PC in an enterprise and people working may have no time available in the day to access the intranet anyway. In this situation, the intranet would not be an effective delivery channel and face-to-face communication may be better.

- ◆ **Traditional Channel need to be formalized:** Instead of attempting to eliminate existing information sources in favor of the intranet, it may be more beneficial to formalize the current practices. For example, staff may have key details pinned to the walls of their cubicles or work locations. The best outcome in this situation could be to organize monthly reprinting of these notes to ensure they are up-to-date.

Product Delivery Channels

The way customer response is changing the way business operates. Online retailers are giving a run for money to physical mall owners. Customers while going for online shopping find wide range of products. The best part is that, a customer in a small town/village can have a shopping experience of a large store. The change is so drastic that physical brick and mortar sellers have to bring themselves on internet. The change is other way round also. Many online travel sites have opened brick and mortar office in cities and towns, to meet their customers. The key words are “convincing” and “capturing” the customer. So, any delivery channel shall work till it convinces customer. The customers have moved from purchase of physical books to e-books. This shift has forced business to strategize their delivery channels.

4. (a) Abbreviations used are as follows:

P₁: Percentage of employees falling in salary slab (salary ≤ 10,000);

P₂: Percentage of employees falling in salary slab (10,001 ≤ salary ≤ 20,000)

P₃: Percentage of employees falling in salary slab (20,001 ≤ salary ≤ 40,000)

P₄: Percentage of employees falling in salary slab (salary ≥ 40,001)

I: Count of number of employees

C₁: Number of employees falling in salary slab (salary ≤ 10,000);

C₂: Number of employees falling in salary slab (10,001 ≤ salary ≤ 20,000);

C₃: Number of employees falling in salary slab (20,001 ≤ salary ≤ 40,000);

C₄: Number of employees falling in salary slab (salary ≥ 40,001);

HRA: House Rent allowance;

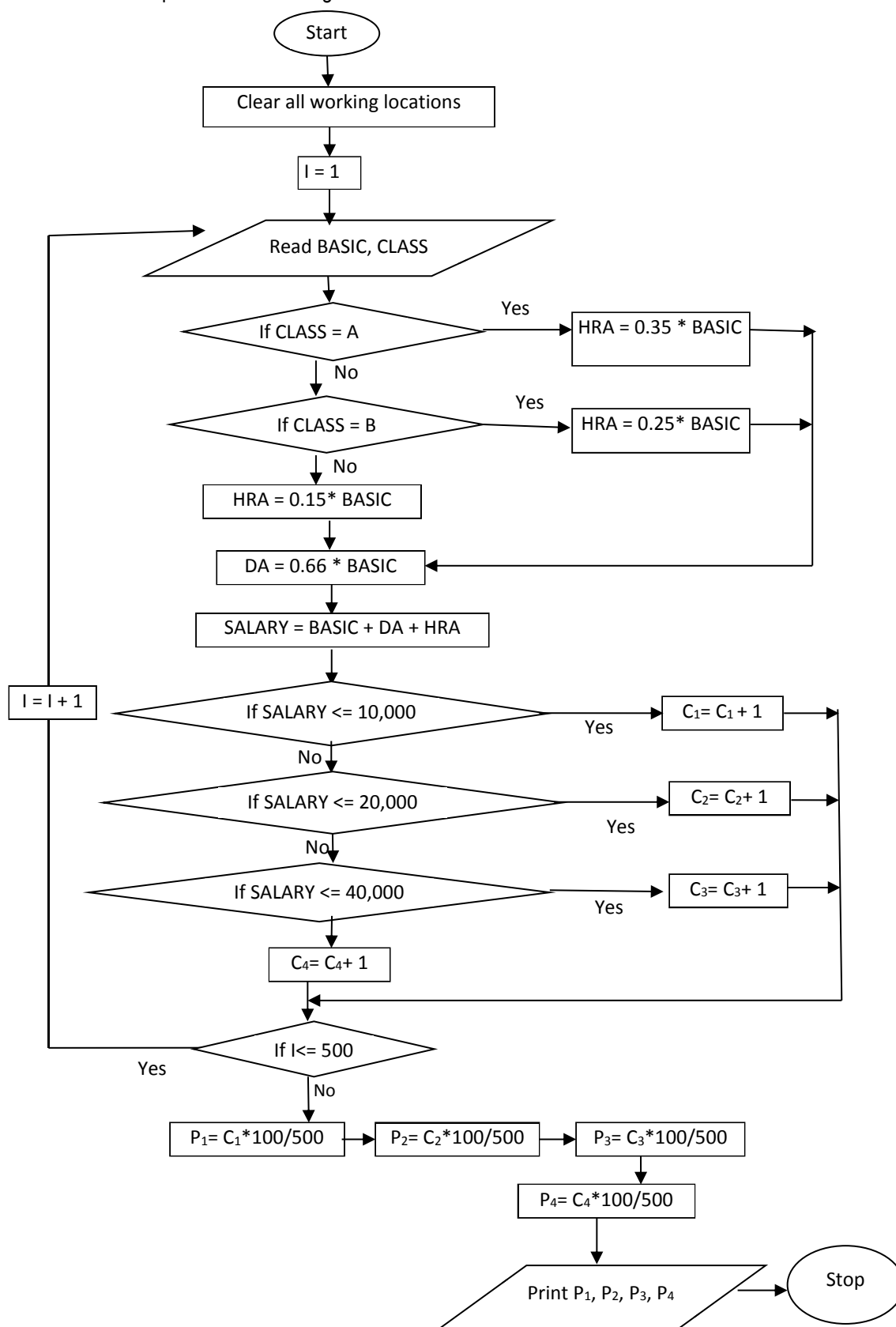
DA: Dearness Allowance;

SALARY: Salary of employee;

BASIC: Basic salary of the employee;

CLASS: Class of each employee

The required flowchart is given below:



(b) The various internetwork processors that may be used by IT Administrator to manage ABC University campus network are as follows:

- **Switch** - Switch is a communications processor that makes connections between telecommunications circuits in a network so that a telecommunications message can reach its intended destination.
- **Router** – Router is a communications processor that interconnects networks based on different rules or protocols, so that a telecommunications message can be routed to its destination.
- **Hub** – Hub is a port-switching communications processor. This allows for the sharing of the network resources such as servers, LAN workstations, printers, etc.
- **Bridge** – Bridge is a communications processor that connects numerous Local Area Networks (LANs). It magnifies the data transmission signal while passing data from one LAN to another.
- **Repeater** – Repeater is a communications processor that boosts or amplifies the signal before passing it to the next section of cable in a network.
- **Gateway** – Gateway is a communications processor that connects networks that use different communication architectures.

5. (a) The key Business Intelligence (BI) tools that See&Order can use are as follows:

- ◆ **Simple Reporting and Querying:** This involves using the data warehouse to get response to the query: “Tell me what happened.” The objective of a BI implementation is to turn operational data into meaningful knowledge. This requires that BI must be connected with the enterprise data and all the necessary data is available in one place, in one common format. Data warehousing (DW) provides the perfect architecture to combine all the data dispersed throughout the enterprise in different applications in a variety of formats, on a range of hardware, which could be anywhere to be cleaned up, summarized, converted and integrated into one common format and available centrally for further processing. There are reporting tools used to arrange information into a readable format and distribute it to the people who need it.
- ◆ **Business Analysis:** This involves using the data to get response to the query: “Tell me what happened and why.” Business analysis refers to presenting visualizing data in a multidimensional manner. Query and report data is presented in row after row of two-dimensional data. Typically, the first dimension is the headings for the data columns and the second dimension is the actual data listed below those column headings. Business analysis allows the user to plot data in row and column coordinates to further understand the intersecting points. **ETL (Extract, Transform, Load)** tools bring in data from outside sources, transform it to meet business specified operational needs, and then load the results into the company database. Metadata tools gather and analyze metadata, helping to increase data quality.
- ◆ **Dashboards:** This involves using the information gathered from the data warehouse and making it available to users as snapshots of many different things with the objective of getting response to the query: “Tell me a lot of things, but without too much effort”. Dashboards are flexible tools that can be bent into as many different shapes as per user requirements. It includes a collection of graphs, reports, and KPIs that can help monitor such business activities as progress on a specific initiative.
- ◆ **Scorecards:** This involves providing a visual representation of the enterprise strategy by taking critical metrics and mapping them to strategic goals throughout the enterprise. Scorecards offer a rich, visual gauge to display the performance of specific initiatives, business units, or the enterprise as a whole and the individual goals in the context of larger enterprise strategy. Scorecards distil information into a small number of metrics and targets

and provide users with an at-a-glance perspective of information. A scorecard has a graphical list of specific, attainable strategic milestones, combined with metrics that serve as benchmarks. Specific measures on how well the company has actually performed specified activities are linked in the scorecard with graphical display highlighting the status of each goal.

- ◆ **Data Mining or Statistical Analysis:** This involves using statistical, artificial intelligence, and related techniques to mine through large volumes of data and providing knowledge without users even having to ask specific questions. The objective is to provide interesting and useful information to users by design even without their querying. Data Mining involves data analysis for discovering useful patterns that are “hidden” in large volume of diverse data. For example: Market segmentation - identify common characteristics of customers who buy same products. OLAP (Online Analytical Processing) is a multi-dimensional analytical tool typically used in data mining, that gathers and process vast amounts of information into useful packets.

(b) The reasons why documentation is important to Information Systems are as follows:

- **Depicting how the system works:** In computerized systems, the processing is electronic and invisible. Therefore, documentation is required to help employees understand how a system works, assist accountants in designing controls for it, demonstrates to managers that it will meet their information needs, and assists auditors in understanding the systems that they test and evaluate.
- **Training users:** Documentation also includes user guides, manuals, and similar operating instructions that help people learn how an Information System operates. These documentation aids help train users to operate Information systems hardware and software, solve operational problems, and perform their jobs better.
- **Designing new systems:** Documentation helps system designers develop new systems in much the same way that blueprints help architects design building. Well-written documentation and related graphical systems-design methodologies play key roles in reducing system failures and decreasing the time spent correcting emergency errors.
- **Controlling system development and maintenance costs:** Personal computer applications typically employ prewritten, off-the-shelf software that is relatively reliable and inexpensive. Good documentation helps system designers develop object-oriented software, which is software that contains modular, reusable code that further avoid writing duplicate programs and facilitate changes when programs must be modified later.
- **Standardizing communications with others:** Documentation aids such as E-R Diagrams, System Flowcharts, and Data Flow Diagrams are more standardized tools, and they are more likely to be interpreted the same way by all parties viewing them. Thus, documentation tools are important because they help describe an existing or proposed system in a common language and help users communicate with one another about these systems.
- **Auditing Information Systems:** Documentation helps depict audit trails. For example- when investigation and Accounting Information system, the auditors typically focus on internal controls. In such circumstances, documentation helps auditors determine the strengths and weaknesses of a system’s controls and therefore the scope and complexity of the audit.
- **Documenting business processes:** Understanding business processes can lead to better systems and better decision. Documentation helps managers better understand how their businesses operate what controls are involved or missing from critical organizational activities, and how to improve core business activities.

SECTION – B: STRATEGIC MANAGEMENT

SUGGESTED ANSWERS/HINTS

1. (A)

(1)	(2)	(3)	(4)	(5)
(d)	(b)	(c)	(d)	(c)

(B) (a)

(C) (a)

(D) (b)

(E) (a)

(F) (b)

(G) (a)

2. According to Porter, strategies allow organizations to gain competitive advantage from three different bases: cost leadership, differentiation, and focus. Porter called these base generic strategies.

X-Olympus is facing cutthroat competition due to saturation of market and price wars as there is no clear leader out of the numerous competitors. For this, the strategy adopted by X-Olympus is **Product Differentiation** by introducing a unique product to cater the customer needs at a lesser cost which would insulate it from the fierce competition and never-ending price wars.

3. (a) Yes, strategy is partly proactive and partly reactive. In proactive strategy, organisations will analyse possible environmental scenarios and create strategic framework after proper planning and set procedures and work on these strategies in a pre-determined manner. However, in reality no company can forecast both internal and external environment exactly. Everything cannot be planned in advance. It is not possible to anticipate moves of rival firms, consumer behaviour, evolving technologies and so on.

There can be significant deviations between what was visualised and what actually happens. There can be significant or major strategic changes when the environment demands. Reactive strategy is triggered by the changes in the environment and provides ways and means to cope with the negative factors or take advantage of emerging opportunities.

- (b) As industry's Key Success Factors (KSFs) are those things that most affect industry members' ability to prosper in the market place – the particular strategy elements, product attributes, resources, competencies, competitive capabilities and business outcomes that spell the difference between profit & loss and ultimately, between competitive success or failure. KSFs by their very nature are so important that all firms in the industry must pay close attention to them. They are the prerequisites for industry success, or, to put it in another way, KSFs are the rules that shape whether a company will be financially and competitively successful.

4. (a) Decision making is a managerial process of selecting the best course of action out of several alternative courses for the purpose of accomplishment of the organisational goals. Decisions may be operational, i.e., which relate to general day-to-day operations. They may also be strategic in nature.

As owner manager at the top level in the company, Shri Alok Kumar should concentrate on strategic decisions. These are higher level decisions having organisation wide implications. The major dimensions of strategic decisions are as follows:

- ◆ Strategic decisions require top-management involvement as they involve thinking in totality of the organisation.
 - ◆ Strategic decisions involve significant commitment of organisational resources.
 - ◆ Strategic decisions necessitate consideration of factors in the firm's external environment.
 - ◆ Strategic decisions are likely to have a significant impact on the long-term prosperity of the firm.
 - ◆ Strategic decisions are future oriented.
 - ◆ Strategic decisions usually have major multifunctional or multi-business consequences.
- (b) Corporate culture refers to company's values, beliefs, business principles, traditions, ways of operating and internal work environment. Changing problem cultures is very difficult because of deeply held values and habits. It takes concerted management action over a period of time to replace an unhealthy culture with a healthy culture or to root out certain unwanted cultural obstacles and instil ones that are more strategy-supportive.
- ◆ The first step is to diagnose which facets of the present culture are strategy supportive and which are not.
 - ◆ Then, managers have to talk openly and forthrightly to all concerned about those aspects of the culture that have to be changed.
 - ◆ The talk has to be followed swiftly by visible, aggressive actions to modify the culture-actions that everyone will understand are intended to establish a new culture more in tune with the strategy.

Management through communication has to create a shared vision to manage changes. The menu of culture-changing actions includes revising policies and procedures, altering incentive compensation, shifting budgetary allocations for substantial resources to new strategy projects, recruiting and hiring new managers and employees, replacing key executives, communication on need and benefit to employees and so on.

5. (a) Stability strategies, as name suggests, are intended to safeguard the existing interests and strengths of business. It involves organisations to pursue established and tested objectives, continue on the chosen path, maintain operational efficiency and so on. A stability strategy is pursued when a firm continues to serve in the same or similar markets and deals in same products and services. In stability strategy, few functional changes are made in the products or markets, however, it is not a 'do nothing' strategy. This strategy is typical for mature business organizations. Some small organizations also frequently use stability as a strategic focus to maintain comfortable market or profit position.

On the other hand, expansion strategy is aggressive strategy as it involves redefining the business by adding the scope of business substantially, increasing efforts of the current business. In this sense, it becomes opposite to stability strategy. Expansion is a promising and popular strategy that tends to be equated with dynamism, vigor, promise and success. Expansion also includes diversifying, acquiring and merging businesses. This strategy may take the enterprise along relatively unknown and risky paths, full of promises and pitfalls.

- (b) There are at least three major R&D approaches for implementing strategies.
- i. **Be the leader:** The first strategy is to be the first firm to market new technological products. This is a glamorous and exciting strategy but also a dangerous one. Firms such as 3M and General Electric have been successful with this approach, but many other pioneering firms have fallen, with rival firms seizing the initiative.

- ii. **Be an innovative imitator:** A second R&D approach is to be an innovative imitator of successful products, thus minimizing the risks and costs of startup. This approach entails allowing a pioneer firm to develop the first version of the new product and to demonstrate that a market exists. Then, laggard firms develop a similar product. This strategy requires excellent R&D personnel and an excellent marketing department.
- iii. **Be a low cost producer:** A third R&D strategy is to be a low-cost producer by mass-producing products similar to but less expensive than products recently introduced. As a new product accepted by customers, price becomes increasingly important in the buying decision. Also, mass marketing replaces personal selling as the dominant selling strategy. This R&D strategy requires substantial investment in plant and equipment, but fewer expenditures in R&D than the two approaches described earlier.

6. (a) Following are the differences between the market development and product development:

Market Development	Product Development
• Meaning It refers to a growth strategy where the business seeks to sell its existing products into new markets. It is a strategy for company growth by identifying and developing new markets for current company products. • Strategy Application It may be achieved through new geographical markets, new product dimensions or packaging, new distribution channels or different pricing policies to attract different customers or create new market segments.	• Meaning It refers to a growth strategy where business aims to introduce new products into existing markets. It is a strategy for company growth by offering modified or new products to current markets. • Strategy Application It is for company's growth and requires the development of new competencies and the business to develop modified products which can appeal to existing markets.

(b) Although inextricably linked, strategy implementation is fundamentally different from strategy formulation in the following ways:

Strategy Formulation	Strategy Implementation
◆ Strategy formulation focuses on effectiveness. ◆ Strategy formulation is primarily an intellectual process. ◆ Strategy formulation requires conceptual intuitive and analytical skills. ◆ Strategy formulation requires coordination among the executives at the top level.	◆ Strategy implementation focuses on efficiency. ◆ Strategy implementation is primarily an operational process. ◆ Strategy implementation requires motivation and leadership skills. ◆ Strategy implementation requires coordination among the executives at the middle and lower levels.