



**J.K. SHAH**<sup>®</sup>  
**TEST SERIES**  
Evaluate Learn Succeed

**SUGGESTED SOLUTION**

**IPCC May 2017 EXAM**

**I.T. – S.M.**

**Test Code - I N J 1 1 6 6**

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**Answer-1 (a) :**

The Data Processing Cycle consists of following basic steps with alerts, controls and feedback at each step:

1. Data input - Involves the activities like capturing the data, implementing control procedures, recording in journals, posting to ledgers and preparation of reports.
2. Data storage - Involves organizing the data in master file or reference file of an automated system for easy and efficient access.
3. Data processing - Involves addition, deletion and updating of the data in the transaction file, master file or reference file.
4. Information output - Involves generation of documents and managerial reports in printable or electronic form for addressing queries, to control operational activities and help the management in decision making.

The controls on the data are maintained using Audit Trials. This is done by capturing snapshots or by tracing the flow of data. This provides a means to check the accuracy and validity of ledger postings. Storage of these data is in files named General Ledger, Accounts Payable ledger and Accounts Receivable ledger.

**(5 Marks)**

**Answer-1 (b) :**

This phase evaluates results of solution and modifies the system to meet the changing needs. Post implementation review would be done to address:

**(1 Mark)**

1. Programming amendments,
2. Adjustment of clerical procedures,
3. Modification of Reports, and
4. Request for new programs.

**(2 Marks)**

System maintenance could be with following different objectives:

1. Perfective Maintenance: This implies that while the system runs satisfactorily, there is still room for improvement.
2. Adaptive Maintenance: All systems will need to adapt to changing needs within a company.
3. Corrective Maintenance: Problems frequently surface after a system has been in use for a short time, however thoroughly it was tested. Any errors must be corrected.

**(2 Marks)**

This is often the longest of the stages since it is an on-going process having some sort of long term continuum.

**Answer-1 (c) :**

In trying to understand the environment, managers face different problems as follows:

1. The first difficulty is in diversity. The environment encapsulates many different influences; the difficulty is in making sense of this diversity in a way which can contribute to strategic decision-making. Listing all conceivable environmental influences may be possible, but it may not be of much use because no overall picture emerges of really important influences on the organization. **(1 Mark)**
2. The second difficulty is that of uncertainty. Managers typically claim that the pace of technological change and the speed of global communications mean more and faster change now than ever before. Whether or not change is in fact faster now than hitherto, and whether or not the changes are more unpredictable, it remains the case that, while it is important to try to understand future external influences on an organization, it is very difficult to do so. **(2 Marks)**
3. Managers are no different from other individuals in the way they cope with complexity. They tend to simplify such complexity by focusing on aspects of the environment, which, perhaps, have been historically important, or confirm prior views. These are not perverse managerial behaviours; they are the natural behaviour of everyone faced with complexity. Arguably, one of the tasks of the strategic manager is to find ways & means to break out of oversimplification or bias in the understanding of their environment, while still achieving a useful and usable level of analysis **(2 Marks)**

**Answer-1 (d) :**

The origins of business policy can be traced back to 1911, when Harvard Business School introduced an integrative course in management aimed at the creation of general management capability. This course was based on interactive case studies which had been in use at the school for instructional purposes since 1908. The course was intended to enhance general managerial capability of students. However, the introduction of business policy in the curriculum of business schools/management institutes came much later. **(2 Marks)**

Business policy tends to emphasise on the rational analytical aspect of strategic management. It presents a framework for understanding strategic decision making. Such a framework enables a person to make preparations for handling general management responsibilities. (2 Marks)

Strategic Management enables an organisation to develop and maintain competitive a advantage so that it can outperform its competitors and to have dominant role in the market. Strategic Management guides the company successfully through all charges in the environment. (1 Mark)

**Answer-2 (a) :**

1. There are two categories of encryption/decryption methods: the Secret Key Method and the Public Key Method.
  - a. In Secret key encryption/decryption method, the same key is used by both sender and the receiver. The sender uses this key and an encryption algorithm to encrypt data; the receiver uses the same key and the corresponding decryption algorithm to decrypt the data. In this, the algorithm used for decryption is the inverse of the algorithm used for encryption.
  - b. In Public key encryption, there are two keys: a private key and a public key. The private key is kept by the receiver and the public key is announced to the public. (3 Marks)
2. There are two basic approaches to encryption:
  - a. Hardware encryption devices are available at a reasonable cost, and can support high- speed traffic. If the Internet is being used to exchange information among branch offices or development collaborators, for instance, use of such devices can ensure that all traffic between these offices is secure.
  - b. Software encryption is typically employed in conjunction with specific applications. Certain electronic mail packages, for example, provide encryption and decryption for message security. (3 Marks)

**Answer-2 (b) :**

- (i) Star in BCG Matrix: BCG growth-share matrix is a simple way to portray an organisation's portfolio of investments. Growth share matrix also known for its cow and dog metaphors is popularly used for resource allocation in a diversified company. The matrix is based on combinations of relative market share of the products or SBUs and their market growth rate. (2 Marks)
- (ii) Stars, a position in the matrix, are characterised by high market share and high growth rate. They are products or SBUs that are growing rapidly. They also need heavy investment to maintain their position and finance their rapid growth potential. Business organisations that enjoy star positions have best opportunities for expansion and growth. (2 Marks)

**Answer-2 (c) :**

A company's vision, objectives, strategy, and approach to strategy execution are never final managing strategy is an ongoing process, not an every now and then task. The fifth stage of the strategy management process – evaluating the company's progress, assessing the impact of new external developments, and making corrective adjustments – is the trigger point for deciding whether to continue or change the company's vision, objectives, strategy, and/or strategy-execution methods. So long as the company's direction and strategy seem well matched to industry and competitive conditions and performance targets are being met, company executives may decide to stay the course. Simply fine-tuning the strategic plan and continuing with ongoing efforts to improve strategy execution are sufficient. (3 Marks)

But whenever a company encounters disruptive changes in its external environment, questions need to be raised about the appropriateness of its direction and strategy. If a company experiences a downturn in its market position or shortfalls in performance, then company managers are obligated to ferret out whether the causes relate to poor strategy, poor execution, or both and then to take timely corrective action. A company's direction, objectives, and strategy have to be revisited anytime external or internal conditions warrant. It is to be expected that a company will modify its strategic vision, direction, objectives, and strategy over time. (2 Marks)

Proficient strategy execution is always the product of much organizational learning. It is achieved unevenly – coming quickly in some areas and proving nettlesome and problematic in others. Periodically assessing what aspects of strategy execution are working well and what needs improving is normal and desirable. Successful

strategy execution entails vigilantly searching for ways or continuously improve and then making corrective adjustments whenever and wherever it is useful to do so **(1 Mark)**

**Answer-3 (a) :**

IS can support the four level of decisions which revolves around Strategy, Management, Knowledge and Operations. Information systems can be broadly classified in 4 types which are as follows:

1. **Strategic-Level Systems:** For strategic managers to track and deal with strategic issues, assisting long-range planning. A principle area is tracking changes in the external conditions (market sector, employment levels, share prices, etc.) and matching these with the internal conditions of the organization. **(1.5 Marks)**
2. **Management-Level Systems:** Used for the monitoring, controlling, decision-making, and administrative activities of middles management. Some of these systems deal with predictions or "what if..." type questions. e.g. "What would happen to our profits if the completion of the new production plant was delayed by 6 months?" Tracking current progress in accord with plans is another major function of systems at this level. **(1.5 Marks)**
3. **Knowledge-Level Systems:** These systems support discovery, processing and storage of knowledge and data workers. These further control the flow of paper work and enable group working. **(1.5 Marks)**
4. **Operational-Level Systems:** Support operational managers tracking elementary activities. These can include tracking customer orders, invoice tracking, etc. Operational level systems ensure that business procedures are followed. **(1.5 Marks)**

**Answer-3 (b) :**

- (a) Correct: Augmented marketing refers to deliberate and accelerated efforts to get better marketing returns through additional means. It includes provision of additional customer services and benefits built around the care and actual products that relate to introduction of hi-tech services like movies on demand, on-line computer repair services, secretarial services, etc. Such innovative offerings provide a set of benefits that promise to elevate customer service to unprecedented levels. **(2 Marks)**
- (b) Correct: Direct marketing is done through various advertising media that interact directly with customer. Teleshopping is a form of direct marketing which operates without conventional intermediaries and employs television and other IT devices for reaching the customer. The communication between the marketer and the customer is direct through third party interfaces such as telecom or postal systems. **(2 Marks)**

**Answer-3 (c) :**

Some examples of marketing decisions that may require special attention are as follows:

1. The kind of distribution network to be used. Whether to use exclusive dealerships or multiple channels of distribution **(1 Mark)**
2. The amount and the extent of advertising. Whether to use heavy or light advertising. What should be the amount of advertising in print media, television or internet? **(1 Mark)**
3. Whether to limit or enhance the share of business done with a single or a few customers? **(1 Mark)**
4. Whether to be a price leader or a price follower? **(1 Mark)**
5. Whether to offer a complete or limited warranty? **(1 Mark)**
6. Whether to reward salespeople based on straight salary, straight commission, or on a combination of salary/commission? **(1 Mark)**

**Answer-4 (a) :**

Let us define the variables first.

HNO: House Number

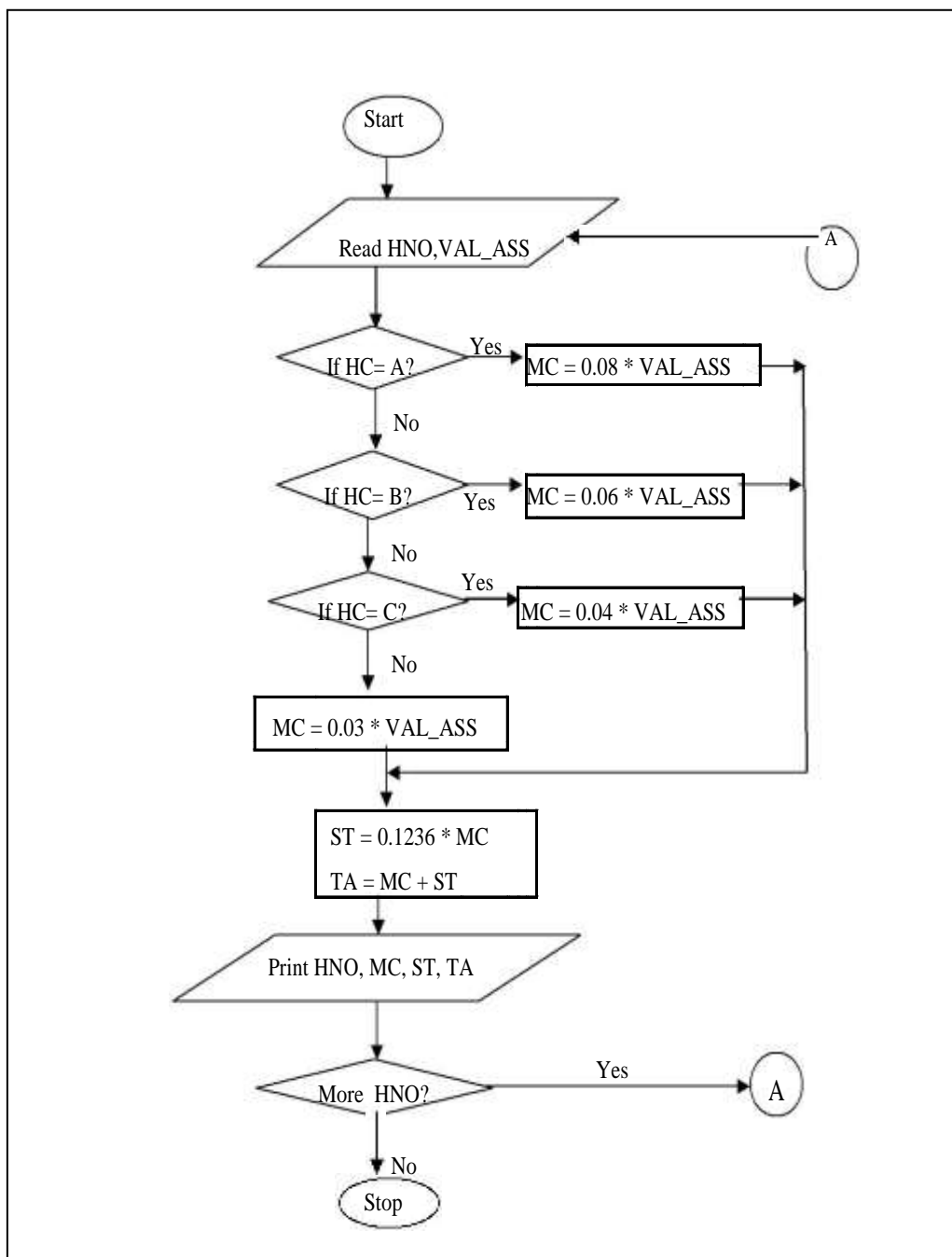
HC: House Category

VAL\_ASS: Value of Advanced Security Systems

MC: Maintenance Charges

ST: Service Tax TA: Total Amount

The desired flowchart is given as follows

**Answer-4 (b) :**

- (a) Incorrect: Although any business action may result directly or indirectly in creation/erosion of shareholders wealth, the main focus of six sigma is on delivering value to the customers. Six sigma aims in improving customer satisfaction. Primarily, six sigma means maintenance of the desired quality in processes and end products. It also means taking systematic and integrated efforts toward improving quality and reducing cost. (2 Marks)

- (b) Correct: Six sigma puts the customer first and uses facts and data to derive better solutions and products. Six sigma focus on three main areas: improving customer satisfaction, reducing cycle time and reducing defects. (2 Marks)

**Answer-4 (c) :**

- Serving additional customer groups or expanding into new geographic markets or product segments. (1 Mark)
- Expanding the company's product line to meet a broader range of customer needs. (1 Mark)
- Utilizing existing company skills or technological know-how to enter new product lines or new businesses (1 Mark)

- Using the internet and e-commerce technologies to dramatically cut costs and/or to pursue new sales growth opportunities (1 Mark)
- Integrating forward or backward (1 Mark)
- Falling trade barriers in attractive foreign markets (1 Mark)
- Openings to take market share away from rivals. (1 Mark)
- Ability to grow rapidly because of sharply rising demand in one or more market segments (1 Mark)
- Acquisition of rival firms or companies with attractive technological expertise (1 Mark)
- Alliances or joint ventures that expand the firm's market coverage or boost its competitive capability (1 Mark)
- Openings to exploit emerging new technologies. (1 Mark)
- Market openings to extend the company's brand name or reputation to new geographic areas (1 Mark)

**Answer-5 (a) :**

Service Models of Cloud Computing are as follows:

- **Infrastructure as a Service (IaaS):** It is the foundation of cloud services that provides clients with access to server hardware, storage, bandwidth and other fundamental computing resources. The service is typically paid for on a usage basis and may also include dynamic scaling so that if the customer needs more resources than expected, s/he can get them on the fly (probably to a given limit). It provides access to shared resources on need basis, without revealing details like location and hardware to clients (1 Mark)
- **Software as a Service (SaaS):** It includes a complete software offering on the cloud. Users can access a software application hosted by the cloud vendor on pay-per-use basis. SaaS is a model of software deployment where an application is hosted as a service provided to customers across the Internet by removing the need to install and run an application on a user's own computer. SaaS can alleviate the burden of software maintenance and support but users relinquish control over software versions and requirements. (1 Mark)
- **Platform as a Service (PaaS):** It provides clients with access to the basic operating software and optional services to develop and use software applications (e.g. database access and payment service) without the need to buy and manage the underlying computing infrastructure. For example, Google App Engine allows clients to run their web applications (i.e. software that can be accessed using a web browser such as Internet Explorer over the internet) on Google's infrastructure (1 Mark)
- **Network as a Service (NaaS):** It is a category of cloud services where the capability provided to the cloud service user is to use network/transport connecting services. NaaS involves optimization of resource allocation by considering network and computing resources as a whole. Some of the examples are: Virtual Private Network, Mobile Network Virtualization etc. (1 Mark)
- **Communication as a Service (CaaS):** CaaS is an outsourced enterprise communication solution that can be leased from a single vendor. The CaaS vendor is responsible for all hardware and software management and offers guaranteed Quality of Service (QoS). It allows businesses to selectively deploy communication devices and modes on a pay-as-you-go, as-needed basis. This approach eliminates the large capital investments. Examples are: Voice over IP (VoIP), Instant Messaging (IM), Collaboration and Videoconferencing application using fixed and mobile devices. (1 Mark)

**Answer-5 (b) :**

Three Tier Systems

The Following are the advantages of Three-Tier systems:

- Clear separation of user-interface-control and data presentation from application-logic: Through this separation, more clients are able to have access to a wide variety of server applications. The two main advantages for client-applications are quicker development through the reuse of pre-built business-logic components and a shorter test phase.
- Dynamic load balancing: If bottlenecks in terms of performance occur, the server process can be moved to other servers at runtime.

- Change management: It is easy and faster to exchange a component on the server than to furnish numerous PCs with new program versions. **(3 Marks)**

The disadvantages of Three-Tier systems are as below:

- It creates an increased need for network traffic management, server load balancing, and fault tolerance.
- Current tools are relatively immature and are more complex.
- Maintenance tools are currently inadequate for maintaining server libraries. **(2 Marks)**

**Answer-5 (c) :**

- (a) Facilitation of change: The Human resource will be more concerned with substance rather than form, accomplishments rather than activities, and practice rather than theory. The personnel function will be responsible for furthering the organization not just maintaining it. Human resource management will have to devote more time to promote changes than to maintain the status quo. **(2 Marks)**
- (b) Building core competency: The human resource manager has a great role to play in developing core competency by the firm. A core competence is a unique strength of an organization which may not be shared by others. If the business is organized on the basis of core competency, it is likely to generate competitive advantage. Because of this reason, many organizations have restructured their businesses by divesting those businesses which do not match core competence. **(2 Marks)**
- (c) Development of works ethics and culture: As changing work ethic requires increasing emphasis on individuals, jobs will have to be redesigned to provide challenge. Flexible starting and quitting times for employees may be necessary. Focus will shift from extrinsic to intrinsic motivation. A vibrant work culture will have to be developed in the organizations to create an atmosphere of trust among people and to encourage creative ideas by the people. Far reaching changes with the help of technical knowledge will be required for this purpose. **(2 Marks)**

**Answer-6 (a) :**

Advertising: The company communicates its products and services (catalogue);

Offering: The company offers specific goods and services;

Selling: The company agrees with the customer on the content of a specific order;

Billing: The company produces the invoice;

Paying: The buyer pays the seller by giving a payment instruction; **(2 Marks)**

Matching: The seller matches the payment information (the authorization results and the actual crediting of account) with the orders and feeds the result into the back-office; **(1 Mark)**

Delivering: The seller delivers to the buyer; and **(0.5 Mark)**

Resolving: The seller and buyer try to resolve delivery or payment issues related to the purchase. **(0.5 Mark)**

However, in some cases, the payment can also be a separate off-line transaction or a transaction via a financial intermediary (depicted by the dotted line). The current payment instruments for use on the web have different characteristics in terms of risk and security. **(1 Mark)**

**Answer-6 (b) :**

**Application Areas of Grid Computing**

1. Civil engineers collaborate to design, execute, & analyze shake table experiments. **(1 Mark)**
2. An insurance company mines data from partner hospitals for fraud detection. **(1 Mark)**
3. An application service provider offloads excess load to a compute cycle provider. **(1 Mark)**
4. An enterprise configures internal & external resources to support e-Business workload. **(1 Mark)**
5. Large-scale science and engineering are done through the interaction of people, heterogeneous computing resources, information systems and instruments, all of which are geographically and organizationally dispersed. **(1 Mark)**

**Answer-6 (c) :**

- (a) Corporate culture refers to values, beliefs, business principles, traditions, ways of operating, and internal work environment. An organization's culture is either an important contributor or an obstacle to successful strategy execution. The beliefs, vision, objectives, business approaches and practices underpinning a company's strategy may be compatible with its culture or not. When they

are, the culture becomes a valuable ally in strategy implementation and execution. When the culture is in conflict with some aspect of the company's direction, performance targets or strategy, the culture becomes a stumbling block that impedes successful strategy implementation and execution.

**(2 Marks)**

A culture grounded in values, practices, and behavioural norms that match what is needed for good strategy execution helps energize people throughout the company to do their jobs in a strategy-supportive manner, adding significantly to the power and effectiveness of strategy execution.

**(2 Marks)**

- (b) Strategic Business Unit (SBU) is a unit of the company that has a separate mission and objectives and which can be planned independently from other businesses of the organisation. The three most important characteristics of SBU are: f& It is a single business or a collection of related businesses which offer scope for independent planning and which might feasibly stand alone from the rest of the organization. f& Has its own set of competitors. f& Has a manager who has responsibility for strategic planning and profit performance. He has control of profit-influencing factors. **(2 Marks)**

**Answer-7 (a) :**

- (a) Hub – Hub is a port-switching communication processor. This allows for the sharing of the network resources such as servers, LAN workstations, printers, etc. **(2 Marks)**
- (b) Bridge – Bridge is a communication processor that connects number of Local Area Networks (LAN). It magnifies the data transmission signal while passing data from one LAN to another. **(2 Marks)**

**Answer-7 (b) :**

1. Knowledge Discovery and Data Mining (KDD) fundamentally deals with ways and means of capturing and making obtainable knowledge of the experts to others, in electronic form. **(1 Mark)**
2. Knowledge Discovery in Databases systems also assist us establish, contact, and communicate with experts (knowledgeable people) on various subjects, surrounded by our organization, or perhaps even outside. **(1.5 Marks)**
3. Knowledge worker (also referred to as an intellectual worker or brain worker) is a key intellect who is employed owing to his or her acquaintance of a subject matter, rather than their ability to perform manual labor. It includes those in the information technology fields, such as computer programmers, systems analysts, technical writers or the people outside of information technology but who are hired for their knowledge of a few subjects, such as lawyers, teachers, and scientists.” **(1.5 Marks)**

**Answer-7 (c) :**

- (a) Incorrect: The acronym BCG stands for Boston Consulting Group, an organization that developed a matrix to portray an organizational corporate portfolio of investment. This matrix depicts growth of business and the business share enjoyed by an organization. The matrix is also known for its cow and dog metaphors and is popularly used for resource allocation in a diversified company. **(2 Marks)**
- (b) Correct: Growth share matrix also known for its cow and dog metaphors is popularly used for resource allocation in a diversified company. Primarily it categorises organisations/products on the basis two factors consisting of the growth opportunities and the market share enjoyed. **(2 Marks)**

**Answer-7 (d) :**

Functional-level managers are responsible for the specific business functions or operations (human resources, purchasing, product development, customer service, and so on) that constitute a company or one of its divisions. Thus, a functional manager's sphere of responsibility is generally confined to one organizational activity, whereas general managers oversee the operation of a whole company or division.

**(1 Mark)**

Although they are not responsible for the overall performance of the organization, functional managers nevertheless have a major strategic role: to develop functional strategies in their area that help fulfil the strategic objectives set by business- and corporate-level general managers **(1 Mark)**

Functional managers provide most of the information that makes it possible for business- and corporate-level general managers to, formulate realistic and attainable strategies. Indeed, because they are closer to



the customer than the typical general manager is, functional managers themselves may generate important ideas that subsequently may become major strategies for the company. Thus, it is important for general managers to listen closely to the ideas of their functional managers. An equally great responsibility for managers at the operational level is strategy implementation: the execution of corporate and business-level plans.

**(2 Marks)**