(GI-11, GI-12+15, GI-13+14, SI-5)

DATE: 06.06.2020   **MAXIMUM MARKS: 100**   **TIMING: 3¼ Hours**

EIS& SM

SECTION – A : ENTERPRISE INFORMATION SYSTEMS AND MANAGEMENT

Q. No. 1 & 2 is Compulsory,
Answer any three questions from the remaining four questions

Answer 1:

1.	Ans. b
2.	Ans. d
3.	Ans. a
4.	Ans. b
5.	Ans. a
6.	Ans. b
7.	Ans. d
8.	Ans. a
9.	Ans. b
10.	Ans. a
11.	Ans. b
12.	Ans. a
13.	Ans. a
14.	Ans. b
15.	Ans. b

{1 Mark Each x 15 = 15 Marks}

Answer 2:

XBRL is a standards-based way to communicate and exchange business information between business systems. These communications are defined by metadata set out in taxonomies, which capture the definition of individual reporting concepts as well as the relationships between concepts and other semantic meaning. Information being communicated or exchanged is provided within an XBRL instance.

The change from paper, PDF and HTML based reports to XBRL ones is a little bit like the change from film photography to digital photography, or from paper maps to digital maps. The new format allows you to do all the things that used to be possible, but also opens up a range of new capabilities because the information is clearly defined, platform-independent, testable and digital. Just like digital maps, digital business reports, in XBRL format, simplify the way that people can use, share, analyze and add value to the data. **{1 M}**

Important features of XBRL

♦ **Clear Definitions:** XBRL allows the creation of reusable, authoritative definitions, called taxonomies, that capture the meaning contained in all the reporting terms used in a business report, as well as the relationships between all of the terms. Taxonomies are developed by regulators, accounting standards setters, government agencies and other groups that need to clearly define information that needs to be reported upon. XBRL doesn't limit what kind of information is defined: it's a language that can be used and extended as needed. **{1 M}**

♦ **Testable Business Rules:** XBRL allows the creation of business rules that constrain what can be reported. Business rules can be logical or mathematical, or both and can be used, for example, these business rules can be used to: **{1 M}**
  o stop poor quality information being sent to a regulator or third party, by being run by the preparer while the report is in draft.

- o stop poor quality information being accepted by a regulator or third party, by being run at the point that the information is being received. Business reports that fail critical rules can be bounced back to the preparer for review and resubmission.
- o flagging or highlighting questionable information, allowing prompt follow up, correction or explanation.
- o create ratios, aggregations and other kinds of value-added information, based on the fundamental data provided.
- ♦ **Multi-lingual Support:** XBRL allows concept definitions to be prepared in as many languages as necessary. Translations of definitions can also be added by third parties. This means that it's possible to display a range of reports in a different language to the one that they were prepared in, without any additional work. The XBRL community makes extensive use of this capability as it can automatically open up reports to different communities. **{1 M}**
- ♦ **Strong Software Support:** XBRL is supported by a very wide range of software from vendors large and small, allowing a very wide range of stakeholders to work with the standard. **{1 M}**

Answer 3:
(a) **Cloud computing,** simply means the use of computing resources as a service through networks, typically the Internet. The Internet is commonly visualized as clouds; hence the term "cloud computing" for computation done through the Internet. With Cloud Computing, users can access database resources via the Internet from anywhere, for as long as they need, without worrying about any maintenance or management of actual resources. Besides these, databases in cloud may be highly dynamic and scalable. In fact, it is a very independent platform in terms of computing.

I. **Characteristics of Cloud Computing**
The following is a list of characteristics of a cloud-computing environment. Not all characteristics may be present in a specific cloud solution. However, some of the key characteristics are given as follows:
- ♦ **Elasticity and Scalability:** Cloud computing gives us the ability to expand and reduce resources according to the specific service requirement. For example, we may need a large number of server resources for the duration of a specific task. We can then release these server resources after we complete our task.
- ♦ **Pay-per-Use:** We pay for cloud services only when we use them, either for the short term (for example, for CPU time) or for a longer duration (for example, for cloud-based storage or vault services).
- ♦ **On-demand:** Because we invoke cloud services only when we need them, they are not permanent parts of the IT infrastructure. This is a significant advantage for cloud use as opposed to internal IT services. With cloud services there is no need to have dedicated resources waiting to be used, as is the case with internal services.
- ♦ **Resiliency:** The resiliency of a cloud service offering can completely isolate the failure of server and storage resources from cloud users. Work is migrated to a different physical resource in the cloud with or without user awareness and intervention.
- ♦ **Multi Tenancy:** Public cloud service providers often can host the cloud services for multiple users within the same infrastructure. Server and storage isolation may be physical or virtual depending upon the specific user requirements.

{Any Four Point Each 1 M x 4 = 4 M}

◆ **Workload Movement:** This characteristic is related to resiliency and cost considerations. Here, cloud-computing providers can migrate workloads across servers both inside the data center and across data centers (even in a different geographic area) This migration might be necessitated by cost (less expensive to run a workload in a data center in another country based on time of day or power requirements) or efficiency considerations (for example, network bandwidth). A third reason could be regulatory considerations for certain types of workloads.

Answer:

(b)   Various types of Asynchronous Attacks on data are as follows:

- **Data Leakage:** This involves leaking information out of the computer by means of dumping files to paper or stealing computer reports and tape.
- **Subversive Attacks:** These can provide intruders with important information about messages being transmitted and the intruder may attempt to violate the integrity of some components in the subsystem.
- **Wire-tapping:** This involves spying on information being transmitted over telecommunication network.
- **Piggybacking:** This is the act of following an authorized person through a secured door or electronically attaching to an authorized telecommunication link that intercepts and alters transmissions. This involves intercepting communication between the operating system and the user and modifying them or substituting new messages.

(1 M each 4 point)

Answer 4:

(a)   E-commerce components include the following:

(I)   User: This may be individual / organization or anybody using the e-commerce platforms. As e-commerce, has made procurement easy and simple, just on a click of button e-commerce vendors needs to ensure that their products are not delivered to wrong users. In fact, e-commerce vendors selling products like medicine / drugs need to ensure that such products are not delivered to wrong user.

{1 M}

(II)   E-commerce Vendors: This is the organization / entity providing the user, goods/ services asked for. For example: www.flipkart.com. E-commerce Vendors further needs to ensure following for better, effective and efficient transaction.

-     Suppliers and Supply Chain Management

-     Warehouse operations

-     Shipping and returns

-     E - Commerce catalogue and product display

-     Marketing and loyalty programs

-     Showroom and offline purchase

-     Different Ordering Methods

-     Guarantees

-     Privacy Policy

-     Security

{1 M}

(III) Technology Infrastructure: The computers, servers, database, mobile apps, digital libraries, data interchange enabling the e-commerce transactions.

    (a) **Computers, Servers and Database**
    (b) **Mobile Apps**
    (c) **Digital Library:** A **Digital Library**
    (d) **Data Interchange: Data Interchange**

{1 M}

(IV) Internet / Network: This is the key to success of e-commerce transactions.

- This is the critical enabler for e-commerce. Internet connectivity is important for any e-commerce transactions to go through. Net connectivity in present days can be through traditional as well as new technology.
- The faster net connectivity leads to better e-commerce. Many mobile companies in India have launched 4G services.
- The success of e-commerce trade depends upon the internet capability of organization. At a global level, it is linked to the countries capability to create a high speed network. The latest communication technologies like 4G, 5G have already made in-roads in India.

{1 M}

(V) Web portal: This shall provide the interface through which an individual / organization shall perform e-commerce transactions.

- **Web Portal** is the application through which user interacts with the e-commerce vendor. The front end through which user interacts for an e-commerce transaction. These web portals can be accessed through desktops / laptops / PDA / hand- held computing devices / mobiles and now through smart TVs also.
- The simplicity and clarity of content on web portal is directly linked to customer experience of buying a product online. E-commerce vendors put a lot of money and effort in this aspect.

{1 M}

(VI) Payment Gateway: The payment mode through which customers shall make payments. Payment gateway represents the way e-commerce / m-commerce vendors collects their payments. The payment gateway is another critical component of e-commerce set up. These are the last and most critical part of e-commerce transactions. These assures seller of receipt of payment from buyer of goods / services from e-commerce vendors. Presently numerous methods of payments by buyers to sellers are being used, including Credit / Debit Card Payments, Online bank payments, Vendors own payment wallet, Third Party Payment wallets, like SBI BUDDY or PAYTM, Cash on Delivery (COD) and Unified Payments Interface (UPI).

{1 M}

Answer:

(b) An ideal ERP System where a single database is being utilized and contains all data for various software modules includes the following modules:

♦ **Manufacturing:** Some of the functions include engineering, capacity, workflow management, quality control, bills of material, manufacturing process, etc.

♦ **Financials:** Accounts payable, accounts receivable, fixed assets, general ledger and cash management, etc.

♦ **Human Resources:** Benefits, training, payroll, time and attendance, etc.

♦ **Supply Chain Management:** Inventory, supply chain planning, supplier scheduling, claim processing, order entry, purchasing, etc.

♦ **Projects:** Costing, billing, activity management, time and expense, etc.

(1 M for any 4 point)

♦ **Customer Relationship Management (CRM):** CRM is a term applied to processes implemented by a company to handle its contact with its customers. CRM software is used to support these processes, storing information on current and prospective customers. Information in the system can be accessed and entered by employees in different departments, such as sales, marketing, customer service, training, professional development, performance management, human resource development and compensation.

♦ **Data Warehouse:** Usually this is a module that can be accessed by an organization's customers, suppliers and employees. Data warehouse is a repository of an organization's electronically stored data. These are designed to facilitate reporting and analysis, to retrieve and analyse data; tools to extract, transform and load data into the repository; and to manage the data dictionary.

Answer 5:

(a) As an Information Systems (IS) Auditor, various Audit Tools that can be used to perform IS Auditing are as follows:

(i) **Snapshots:** Tracing a transaction is a computerized system can be performed with the help of snapshots or extended records. The snapshot software is built into the system at those points where material processing occurs which takes images of the flow of any transaction as it moves through the application. These images can be utilized to assess the authenticity, accuracy, and completeness of the processing carried out on the transaction. The main areas to dwell upon while involving such a system are to locate the snapshot points based on materiality of transactions when the snapshot will be captured and the reporting system design and implementation to present data in a meaningful way. **{2 M}**

(ii) **Integrated Test Facility (ITF):** The ITF technique involves the creation of a dummy entity in the application system files and the processing of audit test data against the entity as a means of verifying processing authenticity, accuracy, and completeness. This test data would be included with the normal production data used as input to the application system. In such cases, the auditor must decide what would be the method to be used to enter test data and the methodology for removal of the effects of the ITF transactions. **{1 M}**

(iii) **System Control Audit Review File (SCARF):** The SCARF technique involves embedding audit software modules within a host application system to provide continuous monitoring of the system's transactions. The information collected is written onto a special audit file- the SCARF master files. Auditors then examine the information contained on this file to see if some aspect of the application system needs follow-up. In many ways, the SCARF technique is like the snapshot technique along with other data collection capabilities. **{1 M}**

(iv) **Continuous and Intermittent Simulation (CIS):** This is a variation of the SCARF continuous audit technique. This technique can be used to trap exceptions whenever the application system uses a database management system. The advantage of CIS is that it does not require modifications to the application system and yet provides an online auditing capability. **{1 M}**

(v)   **Audit Hooks:** There are audit routines that flag suspicious transactions. For example, internal auditors at Insurance Company determined that their policyholder system was vulnerable to fraud every time a policyholder changed his or her name or address and then subsequently withdrew funds from the policy. They devised a system of audit hooks to tag records with a name or address change. The internal audit department will investigate these tagged records for detecting fraud. When audit hooks are employed, auditors can be informed of questionable transactions as soon as they occur. This approach of real-time notification displays a message on the auditor's terminal.   **{1 M}**

Answer:

(b)   Banking industry is involved in dealing with public money and thus demands proper checks and balances to ensure close monitoring of the dealing, minimizing the risk arising out of the banking business. A CBS is built with these inherent features. In the past few years, banks have implemented these major technology initiativesand have deployed new state-of-the-art and innovative banking services. One of the significant projects implemented is the centralized database and centralized application environment for core and allied applications and services which is popularly known as CBS. The design and implementation of CBS has been completed in most of the commercial banks.   **{1 M}**
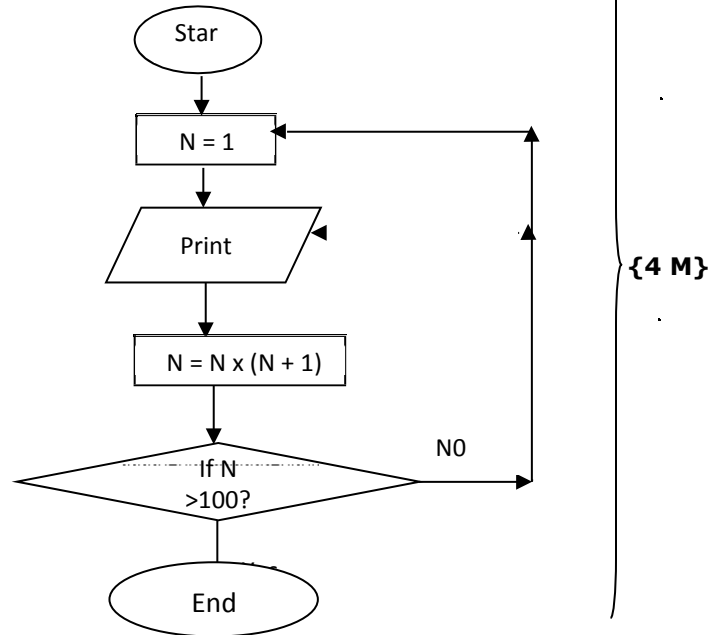
The various components/ features of core banking are as follows:

♦   Opening new accounts and customer on-boarding.

♦   Managing deposits and withdrawals.

♦   Transactions management from initiation to reporting.

♦   Interest calculation and management.

♦   Payments processing (cash, cheques/ mandates, NEFT, RTGS, IMPS etc.).

♦   Loans disbursement and management.

♦   Processing cash deposits and withdrawals.

♦   Processing payments and cheques.

♦   Processing and servicing loans.

♦   Accounts management.

♦   Configuring and calculating interest.

♦   Customer Relationship Management (CRM) activities.

♦   Setting criteria for minimum balances, interest rates, withdrawals allowed, limits and so on.

♦   Maintaining records for all the bank's transactions.

♦   The branch confines itself to the following key functions:

♦   Creating manual documents capturing data required for input into software

♦   Internal authorization

♦   Initiating Beginning-Of-Day (BOD) operations

♦   End-Of-Day (EOD) operations

♦   Reviewing reports for control and error correction.

(1/4 M for any 12 point)

Answer 6:
(a)   (i)   Let us define the variable first:
                N: Number
                The desired flowchart is as follows:

```
                        ┌─────────┐
                        │  Star   │
                        └─────────┘
                             │
                             ▼
                        ┌─────────┐ ◄──────────────┐
                        │  N = 1  │                │
                        └─────────┘                │
                             │                     │
                             ▼                     │
                        ╱─────────╲  ◄             │
                       ╱   Print   ╲               │
                       ╲           ╱               │
                        ╲─────────╱                │
                             │                     │
                             ▼                     │
                     ┌───────────────┐             │
                     │ N = N x (N + 1)│            │
                     └───────────────┘             │
                             │              NO      │
                             ▼                      │
                     ╱───────────────╲  ──────────►┘
                    ╱    If N          ╲
                    ╲    >100?         ╱
                     ╲───────────────╱
                             │
                             ▼
                        ┌─────────┐
                        │   End   │
                        └─────────┘
```
{4 M}

       (ii)   The output for the above program is as follows:
                1
                2
                6
                42   **{2 M}**

       (iii)   The output of the above program in case N is initialized as 0 will be - 0, 0, 0,
                0, 0 (infinite loop)   **{2 M}**

Answer:
(b)   Proxy Server:

A **Proxy Server** is a computer that offers a computer network service to allow
clients to make indirect network connections to other network services. A client
connects to the proxy server, and then requests a connection, file, or other
resource available on a different server. The proxy provides the resource either
by connecting to the specified server or by serving it from a cache. In some
cases, the proxy may alter the client's request or the server's response for
various purposes.   **{2 M}**

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SECTION – B : STRATEGIC MANAGEMENT
Q. No. 7&8 is Compulsory,
Answer any threequestions from the remaining four questions

Answer 7:

1.	Ans. a	
2.	Ans. d	
3.	Ans. d	
4.	Ans. a	
5.	Ans. d	
6.	Ans. b	
7.	Ans. c	
8.	Ans. c	**{1 M Each}**
9.	Ans. c	
10.	Ans. b	
11.	Ans. a	
12.	Ans. a	
13.	Ans. c	
14.	Ans. d	
15.	Ans. a	

Answer 8:
Steps to understand the competitive landscape

(i)   **Identify the competitor:** The first step to understand the competitive landscape is to identify the competitors in the firm's industry and have actual data about their respective market share. **{1 M}**

(ii)   **Understand the competitors**: Once the competitors have been identified, the strategist can use market research report, internet, newspapers, social media, industry reports, and various other sources to understand the products and services offered by them in different markets. **{1 M}**

(iii) **Determine the strengths of the competitors:** What are the strength of the competitors? What do they do well? Do they offer great products? Do they utilize marketing in a way that comparatively reaches out to more consumers. Why do customers give them their business? **{1 M}**

(iv)   **Determine the weaknesses of the competitors:** Weaknesses (and strengths) can be identified by going through consumer reports and reviews appearing in various media. After all, consumers are often willing to give their opinions, especially when the products or services are either great or very poor. **{1 M}**

(v)   **Put all of the information together:** At this stage, the strategist should put together all information about competitors and draw inference about what they are not offering and what the firm can do to fill in the gaps. The strategist can also know the areas which need to be strengthen by the firm. **{1 M}**

Answer 9:
(a) A typical large organization is a multidivisional organisation that competes in several different businesses. It has separate self-contained divisions to manage each of these. There are three levels of strategy in management of business - corporate, business, and functional.

The corporate level of management consists of the chief executive officer and other top level executives. These individuals occupy the apex of decision making within the organization. The role of corporate-level managers is to oversee the development of strategies for the whole organization. this role includes defining the mission and **{2 M}**

goals of the organization, determining what businesses it should be in, allocating resources among the different businesses and so on rests at the corporate Level.

The development of strategies for individual business areas is the responsibility of the general managers in these different businesses or business level managers. a business unit is a self-contained division with its own functions - for example, finance, production, and marketing. the strategic role of business-level manager, head of the division, is to translate the general statements of direction and intent that come from the corporate level into concrete strategies for individual businesses. **{1 M}**

Functional-level managers are responsible for the specific business functions or operations such as human resources, purchasing, product development, customer service, and so on. 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. **{2 M}**

Answer:

(b) SWOT analysis is a tool used by organizations for evolving strategic options for the future. The term SWOT refers to the analysis of strengths, weaknesses, opportunities and threats facing a company. Strengths and weaknesses are identified in the internal environment, whereas opportunities and threats are located in the external environment. **{1 M}**

Strength: Strength is an inherent capability of the organization which it can use to gain strategic advantage over its competitor. **{1 M}**

Weakness: A weakness is an inherent limitation or constraint of the organisation which creates strategic disadvantage to it. **{1 M}**

Opportunity: An opportunity is a favourable condition in the external environment which enables it to strengthen its position. **{1 M}**

Threat: An unfavourable condition in the external environment which causes a risk for, or damage to the organisation's position. **{1 M}**

Answer 10:

(a) A Mission statement tells you the fundamental purpose of the organization. It concentrates on the present. It defines the customer and the critical processes. It informs you of the desired level of performance. On the other hand, a vision statement outlines what the organization wants to be. It concentrates on the future. It is a source of inspiration. It provides clear decision-making criteria.

A mission statement can resemble a vision statement in a few companies, but that can be a grave mistake. It can confuse people. Following are the major differences between vision and mission: **{2 M}**

1. The vision states the future direction while the mission states the ongoing activities of the organisation.

2. The vision statement can galvanize the people to achieve defined objectives, even if they are stretch objectives, provided the vision is specific, measurable, achievable, relevant and time bound. A mission statement provides a path to realize the vision in line with its values. These statements have a direct bearing on the bottom line and success of the organization. **{2 M}**

3. A vision statement defines the purpose or broader goal for being in existence or in the business and can remain the same for decades if crafted well while a mission statement is more specific in terms of both the future state and the time frame. Mission describes what will be achieved if the organization is successful. **{1 M}**

Answer:

(b) Concentric diversification occurs when a firm adds related products or markets. On the other hand, conglomerate diversification occurs when a firm diversifies into areas that are unrelated to its current line of business. **{2 M}**

In concentric diversification, the new business is linked to the existing businesses through process, technology or marketing. In conglomerate diversification, no such linkages exist; the new business/product is disjointed from the existing businesses/products. **{2 M}**

The most common reasons for pursuing a concentric diversification are that opportunities in a firm's existing line of business are available. However, common reasons for pursuing a conglomerate growth strategy is that opportunities in a firm's current line of business are limited or opportunities outside are highly lucrative. **{1 M}**

Answer 11:

(a) To achieve differentiation, following are the measures that could be adopted by an organization to incorporate:

1.   Offer utility for the customers and match the products with their tastes and preferences.
2.   Elevate the performance of the product.
3.   Offer the promise of high quality product/service for buyer satisfaction.
4.   Rapid product innovation.
5.   Taking steps for enhancing image and its brand value.
6.   Fixing product prices based on the unique features of the product and buying capacity of the customer.

(1 M for any 5 point)

Answer:

(b) Successful implementing supply management systems requires a change from managing individual functions to integrating activities into key supply chain processes. It involves collaborative work between buyers and suppliers, joint product development, common systems and shared information. A key requirement for successfully implementing supply chain will be network of information sharing and management. The partners need to link together to share information through electronic data interchange and take decisions in timely manner.

Implementing and successfully running supply chain management system will involve: **{1 M}**

1.   Product development: Customers and suppliers must work together in the product development process. Right from the start the partners will have knowledge of all. Involving all partners will help in shortening the life cycles. Products are developed and launched in shorter time and help organizations to remain competitive.
2.   Procurement: Procurement requires careful resource planning, quality issues, identifying sources, negotiation, order placement, inbound transportation and storage. Organizations have to coordinate with suppliers in scheduling without interruptions. Suppliers are involved in planning the manufacturing process.
3.   Manufacturing: Flexible manufacturing processes must be in place to respond to market changes. They should be adaptive to accommodate customization and changes in the taste and preferences. Manufacturing should be done on the basis of just-in-time (JIT) and minimum lot sizes. Changes in the manufacturing process be made to reduce manufacturing cycle. **{1 M}**
4.   Physical distribution: Delivery of final products to customers is the last position in a marketing channel. Availability of the products at the right place at right time is important for each channel participant. Through physical distribution processes serving the customer become an integral part of **{1 M}**

marketing. Thus, supply chain management links a marketing channel with customers.

5. Outsourcing: Outsourcing is not limited to the procurement of materials and components, but also include outsourcing of services that traditionally have been provided within an organization. The company will be able to focus on those activities where it has competency and everything else will be outsourced.

6. Customer services: Organizations, through interfaces with the company's production and distribution operations, develop customer relationships so as to satisfy them. They work with customer to determine mutually satisfying goals, establish and maintain relationships. This in turn help in producing positive feelings in the organization and the customers. **{1 M}**

7. Performance measurement: There is a strong relationship between the supplier, customer and organisation. Supplier capabilities and customer relationships can be correlated with a firm performance. Performance is measured in different parameters such as costs, customer service, productivity and quality. **{1 M}**

Answer 12:

(a) In the recent years information technology and communications have significantly altered the functioning of organizations. The role played by middle management is diminishing as the tasks performed by them are increasingly being replaced by the technological tools. Hourglass organization structure consists of three layers in an organisation structure with constricted middle layer. The structure has a short and narrow middle management level. **{2 M}**

Information technology links the top and bottom levels in the organization taking away many tasks that are performed by the middle level managers. A shrunken middle layer coordinates diverse lower level activities.
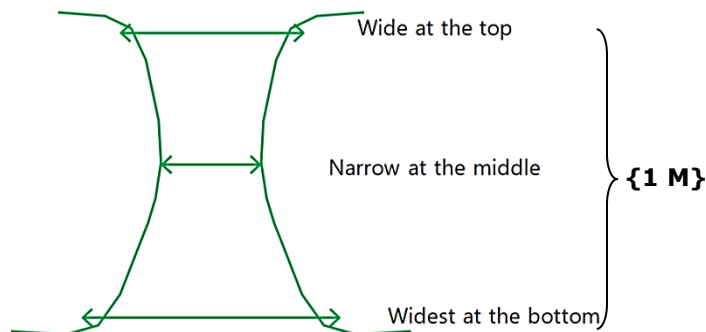
Hourglass Organization Structure

Hourglass structure has obvious benefit of reduced costs. It also helps in enhancing responsiveness by simplifying decision making. Decision making authority is shifted close to the source of information so that it is faster. However, with the reduced size of middle management, the promotion opportunities for the lower levels diminish significantly. **{2 M}**

Answer:

(b) Strategic Control focuses on the dual questions of whether: (1) the strategy is being implemented as planned; and (2) the results produced by the strategy are those intended. **{1 M}**

There are four types of strategic control:

♦   Premise control: A strategy is formed on the basis of certain assumptions or premises about the environment. Premise control is a tool for systematic and **{1 M}**

continuous monitoring of the environment to verify the validity and accuracy of the premises on which the strategy has been built.

♦ Strategic surveillance: Strategic surveillance is unfocussed. It involves general monitoring of various sources of information to uncover unanticipated information having a bearing on the organizational strategy. **{1 M}**

♦ Special alert control: At times, unexpected events may force organizations to reconsider their strategy. Sudden changes in government, natural calamities, unexpected merger/acquisition by competitors, industrial disasters and other such events may trigger an immediate and intense review of strategy. **{1 M}**

♦ Implementation control: Managers implement strategy by converting major plans into concrete, sequential actions that form incremental steps. Implementation control is directed towards assessing the need for changes in the overall strategy in light of unfolding events and results. **{1 M}**

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