

MOCK TEST PAPER-II
INTERMEDIATE (IPC): GROUP – II
PAPER – 7: INFORMATION TECHNOLOGY AND STRATEGIC MANAGEMENT

SECTION – A: Information Technology

Answers

Part I: Multiple Choice Questions

1. (b) Platform as a Service
2. (d) Substitution
3. (c) Consumer-to-Business (C2B) e-Commerce
4. (a) Management Information System
5. (a) Total Quality Management
6. (c) Mobile Computing
7. (a) Packet Switching
8. (c) Atomicity
9. (d) (vi)-(i)-(v)-(ii)-(viii)-(iii)-(iv)-(vii)
10. (d) Software as a Service (SaaS)

Part II: Descriptive Questions

- 1 (a) The benefits of using Application Software are as follows:
 - ◆ **Addressing User needs:** Their single biggest advantage is that it meets the exact needs of the user. Since it is designed specifically with one purpose in mind, the user knows that he has to use the specific software to accomplish his task.
 - ◆ **Less threat from virus:** The threat of viruses invading custom-made applications is very small, since any business that incorporates it can restrict access and can come up with means to protect their network as well.
 - ◆ **Regular updates:** Licensed application software gets regular updates from the developer for security reasons. Additionally, the developer also regularly sends personnel to correct any problems that may arise from time to time.
- (b) **Post-implementation Audit:** Auditors seek to help an organization learn from its experiences in the development of a specific application system. In addition, they might be evaluating whether the system needs to be scrapped, continued, or modified in some way.
- 2 (a) There are six general classes of e-Commerce applications which are described as follows:
 - (i) **Business-to-Business (B2B) e-Commerce:** B2B refers to the exchange of services, information and/or products from one business to another. B2B electronic commerce typically takes the form of automated processes between trading partners and is performed in much higher volumes than Business-to-Consumer (B2C) applications. B2B can also encompass marketing activities between businesses, and not just the final transactions that result from marketing.
 - (ii) **Business-to-Consumer (B2C) e-Commerce:** It is defined as the exchange of services, information and/or products from a business to a consumer, as opposed to between one business and another. Typically, a B2C e-Commerce business has a virtual store front for consumers to purchase goods and services eliminating the need to physically view or pick

up the merchandise. The Business-to-Consumer (B2C) model can save time and money by doing business electronically but customers must be provided with safe and secure as well as easy-to-use and convenient options when it comes to paying for merchandise.

- (iii) **Consumer-to-Business (C2B) e-Commerce:** In C2B e-Commerce model, consumers directly contact with business vendors by posting their project work online so that the needy companies review it and contact the consumer directly with bid. The consumer reviews all the bids and selects the company for further processing. Some examples are guru.com, rentacoder.com, getacoder.com, freelancer.com.
- (iv) **Consumer-to-Consumer (C2C) e-Commerce:** C2C e-Commerce is an Internet-facilitated form of commerce that has existed for the span of history in the form of barter, flea markets, swap meets, yard sales and the like. C2C e-Commerce sites provide a virtual environment in which consumers can sell to one another through a third-party intermediary.
- (v) **Business-to-Government (B2G) e-Commerce:** B2G e-Commerce, also known as e-Government, refers to the use of information and communication technologies to build and strengthen relationships between government and employees, citizens, businesses, non-profit organizations, and other government agencies.
- (vi) **Business-to-Employee (B2E) e-Commerce:** B2E e-Commerce, from an intra-organizational perspective, has provided the means for a business to offer online products and services to its employees.

(b) The steps involved in processing of Credit Card are as follows:

Step 1: Authorization – This is the first step in processing a credit card. After a merchant swipes the card; the data is submitted to merchant's bank, called an acquirer, to request authorization for the sale. The acquirer then routes the request to the card-issuing bank, where it is authorized or denied and the merchant is allowed to process the sale.

Step 2: Batching – This is the second step in processing a credit card. At the end of a day, the merchant reviews all the day's sales to ensure they were authorized and signed by the cardholder. It then transmits all the sales at once, called a batch, to the acquirer to receive payment.

Step 3: Clearing – This is the third step in processing a credit card. After the acquirer receives the batch, it sends it through the card network, where each sale is routed to the appropriate issuing bank. The issuing bank then subtracts its interchange fees, which are shared with the card network, and transfers the remaining amount through the network back to the acquirer.

Step 4: Funding – This is the fourth and final step in processing a credit card. After receiving payment from the issuer, minus interchange fees, the acquirer subtracts its discount fee and sends the remainder to the merchant. The merchant is now paid for the transaction, and the cardholder is billed.

3 (a) The characteristics of Cloud Computing are 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 many 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.
 - ◆ **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.
- (b) The sequential steps involved in any Business Process Automation that can be part of Mr. Ajay's presentation are as follows:
- Step 1: Define why we plan to implement BPA?
- Step 2: Understand the rules/ regulation under which it needs to comply with?
- Step 3: Document the process, we wish to automate.
- Step 4: Define the objectives/goals to be achieved by implementing BPA.
- Step 5: Engage the business process consultant.
- Step 6: Calculate the ROI for project.
- Step 7: Development of BPA.
- Step 8: Testing the BPA.

- 4 (a) The reasons why documentation is important to Information Systems are as follows:
- (i) **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.
 - (ii) **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.
 - (iii) **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.
 - (iv) **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.
 - (v) **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.

(vi) **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.

(vii) **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.

(b) The layers of Transmission Control Protocol/Internet Protocol (TCP/IP) can be used in Internet, Intranet and Extranet are as follows:

- **Application or Process Layer:** It provides communications services for end user applications, appropriate data transmission formats and codes and supports the accomplishment of telecommunications sessions.
- **Host-to-Hot Transport Layer:** This supports the organization and transfer of data between nodes in the network.
- **Internet Protocol (IP):** It provides appropriate routing by establishing connections among network links.
- **Network Interface:** This supports error-free organization and transmission of data in the network.
- **Physical Layer:** It provides physical transmission of data on the telecommunications media in the network.

5 (a) The Commercial applications of Artificial Intelligence (AI) are as follows:

Decision Support

- Intelligent work environment that will help you capture the “why” as well as the “what” of engineered design and decision making.
- Intelligent human–computer interface (HCI) systems that can understand spoken language and gestures, and facilitate problem solving by supporting organization wide collaborations to solve particular problems.
- Situation assessment and resource allocation software for uses that range from airlines and airports to logistics centers.

Information Retrieval

- AI-based Intranet and Internet systems that distill tidal waves of information into simple presentations.
- Natural language technology to retrieve any sort of online information, from text to pictures, videos, maps, and audio clips, in response to English questions.
- Database mining for marketing trend analysis, financial forecasting, and maintenance cost reduction, and more.

Virtual Reality

- X-ray–like vision enabled by enhanced-reality visualization that allows brain surgeons to “see through” intervening tissue to operate, monitor, and evaluate disease progression.
- Automated animation interfaces that allow users to interact with virtual objects via touch (e.g., medical students can “feel” what it's like to stitch severed aortas).

Robotics

- Machine-vision inspections systems for gauging, guiding, identifying, and inspecting products and providing competitive advantage in manufacturing.
- Cutting-edge robotics systems, from micro-robots and hands and legs.

(b) The various phases of Business Process Management Life Cycle are as follows:

- (i) **Analysis phase:** This involves analysis of the current environment and current processes, identification of needs and definition of requirements.
- (ii) **Design phase:** This involves evaluation of potential solutions to meet the identified needs, business process designing and business process modeling.
- (iii) **Implementation phase:** This involves project preparation, blue printing, realization, final preparation, go live and support.
- (iv) **Run and Monitor phase:** This involves business process execution or deployment and business process monitoring.
- (v) **Optimize:** Iterate for continuous improvement.