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Institute of Certified Management Accountants of Sri Lanka
Managing Projects, Information Systems & Data Analytics (PID / ML 3) – Managerial Level
Pilot Paper - Suggested Answer Scheme

Managing Projects – 40%

Part I

- 1) d
- 2) c
- 3) d
- 4) a

(Total 08 marks)

Part II

Question – 01

I.

- Loss of goods during the delivery process
- Damages during delivery and handling goods
- Risk of using the delivery service to deliver illegal items such as drugs
- Risk of using delivery vehicles for personal use by the delivery staff

(04 marks)

II.

- An organizational chart for the project
- Staffing Management Plan
- Responsibility Assignment Matrix (RAM)

(02 marks)

III. (60000)
(101000)

(02 marks)

(Total 08 marks)

Question 02

I. a) Lead
3 (02 marks)

b) actual duration
new project (02 marks)

II. Any two of the following.

- Using guidelines: organization or company you are developing the project for will have their own guidelines for developing the WBS.
- The analogy approach: Develop a WBS using a similar project's WBS as a starting point
- The top-down approach: Start with the largest items of the project and break them into their subordinate items.
- The bottom-up approach: This approach requires team members to define as many tasks related to the project as possible. Then these tasks are aggregated and organized in summary level tasks or higher level tasks on the WBS.
- The mind-mapping approach: This is a technique that uses branches radiating out from a core idea to structure thoughts and ideas.

(04 marks)

(Total 08 marks)

Question 03

I. 45 and 35 (02 marks)

II. None. (02 marks)

III. 260 days (02 marks)

IV. LKR 56,000.00 (02 marks)

(Total 08 marks)

Question 04

I. d (02 marks)

II. Inspection cost (02 marks)

III. True (02 marks)

IV. b (02 marks)

(Total 08 marks)

Information Systems & Data Analytics – 60%

Part I

- 1) c
- 2) b
- 3) d
- 4) a
- 5) b
- 6) d

(Total 12 marks)

Part II

Question 1

The four major categories of information systems are:

1. Transaction processing systems, such as payroll or order processing, track the flow of the daily routine transactions that are necessary to conduct business.
2. Management-information systems (MIS) provide the management control level with reports and access to the organization's current performance and historical records. Most MIS reports condense information from TPS and are not highly analytical.
3. Decision-support systems (DSS) support management decisions when these decisions are unique, rapidly changing, and not specified easily in advance. They have more advanced analytical models and data analysis capabilities than MIS and often draw on information from external as well as internal sources.
4. Executive-support systems (ESS) support senior management by providing data of greatest importance to senior management decision makers, often in the form of graphs and charts delivered via portals. They have limited analytical capabilities but can draw on sophisticated graphics software and many sources of internal and external information.

The various types of systems in the organization exchange data with one another. TPS are a major source of data for other systems, especially MIS and DSS. ESSs primarily receive data from lower-level systems.

(Total 08 marks)

Question 2

Low-cost leadership: Modern Computer may have difficulty competing against the warranty services or computer sales of major national computer manufacturers, such as Dell, but may be able to exercise low-cost leadership in comparison to any other local computer repair stores.

Product differentiation: Although many national computer manufacturers sell customized computers to the individual, Modern computer may be able to differentiate their product by using superior components and adding more services to their product.

Focus on market niche: Modern computer could determine a market niche geared to their advantage in being a local store with in-store technology support and assistance.

Customer and supplier intimacy: Modern computer has an advantage in customer intimacy, in that it can develop relationships with local customers on a face-to-face basis. This advantage could be augmented to offset the low-cost leadership of national manufacturer's such as Dell. Because of much smaller production scales, Modern will probably not be able to exercise as much control over suppliers as Dell or other manufacturers.

(Total 08 marks)

Question 3

Student answers will vary. One answer might be:

The exponential increases of knowledge refer to shared information. For example, once the concept of a wheel is established, inheritors of that knowledge do not have to "reinvent the wheel." The Internet is a tool similar to the wheel: it is based on shared standards and universal tools. The Internet and shared networking technologies are allowing new techniques for attracting customers and selling customers to be developed and adapted very quickly. For example, although early Internet retailers had difficulty setting up secure credit card transactions and payment systems, today there are many systems in place as vendors step in to create shared tools for doing this. The Internet is fostering shared knowledge and as such propagating ever greater increases in that knowledge.

(Total 08 marks)

Question 4

Opportunities associated with digitalization

- 1) Digital representation of information - This has enabled faster and more efficient record-keeping, access to real-time financial data, automated invoicing, and cost savings
- 2) Exploiting the new markets - This is more beneficial in exploiting the new market opportunities, accessing their profitability and cater to the relevant requirements

- 3) Achieve more value adding objectives - We can use the term digitalization to emphasize a slightly different goal – the delivery of new value to clients, not just improvement upon existing processes.
- 4) Reducing the workload of team leaders and managers - Instead of the daily meetings to review the progress, now the team leaders and managers can access the financial states, measures on financial stability and the financial reports via computerized environment while optimizing the working process

Challenges associated with digitalization

- 1) Threat towards the human labour - As most of the processes performed by the individuals are now being digitalized, the requirement for the labour has been reduced.
- 2) Data privacy and security issues– security can only be totally assured with the proper and timely updating and maintenance of the security procedures.
- 3) Task autonomy vs new form of digital control – When computerized, employees have to perform the tasks in a standard way which is too burdensome in the sense of employees.

(Total 08 marks)

Question 5

- 1) **Volume** – One of the main characteristics of big data. Many factors contributed to the exponential increase in data volume, such as transaction-based data stored through the years, text data constantly streaming in from social media, increasing amounts of sensor data being collected, and automatically generated RFID and GPS data.
- 2) **Variety** - in day-to-day activities we not only handle structured data but also semi-structured and mostly unstructured data. Most big data seem to be unstructured, but besides audio, image, video files, social media updates, and other text formats there are also log files, click data, machine and sensor data, etc.
- 3) **Velocity** - means both how fast data is being produced and how fast the data must be processed (captured, stored, and analysed) to meet the need or demand.
- 4) **Veracity** - refers to the conformity to facts: accuracy, quality, truthfulness, or trustworthiness of the data. Tools and techniques are often used to handle Big Data's veracity by transforming the data into quality and trustworthy insights.
- 5) **Validity** - refers to how accurate and correct the data is for its intended use. The benefit from big data analytics is only as good as its underlying data, so you need to adopt good data governance practices to ensure consistent data quality, common definitions, and metadata.

Or explanation of variability, vulnerability, visualization, volatility, or value proposition could be considered as the answer.

(Total 08 marks)

Question 06

Descriptive analytics is the basic level. This focuses on historical reporting. It is often called business reporting because most of the analytics activities at this level deal with creating a report to summarize business activities to answer the question “What happened?” or “What is happening?”. For example, a mortgage bank that provide loans to customer may have such questions as “ How many loan applications were taken each of the past 12 months?”, “What was the total cycle time from application to close?” and “ What was the distribution of loan profitability by credit score and loan-to-value (LTV), which is the mortgage amount divide by the appraised value of the property?” are some of the questions that can be answered though descriptive analytics.

Predictive analytics comes right after the descriptive analytics. Organizations that are matured in descriptive analytics move into this level, where they look beyond what happened and try to answer the question “What *will* happen?”. Predictive modelling uses mathematical, spreadsheet, and statistical models, and address questions relevant to a mortgage bank such as “What impact on loan volume will give marketing program have?”, “How many processors or underwriters are needed for a given loan volume?”, and “Will a given process change reduce cycle time?”.

Prescriptive analytics is the highest echelon in analytics hierarchy. It is where the best alternative among many that are usually created/identified by predictive or descriptive analytics. Therefore, in a sense, this type of analytics tries to answer the question “What should I do?” Prescriptive analytics uses optimization, simulation, and heuristics-based decision-modelling techniques. Typical questions of prescriptive analytics relevant to the mortgage bank example are “What is the optimal staffing to achieve a given profitability constrained by a fixed cycle time?”, and “What is the optimal product mix to maximize profit constraint by fixed staffing?”.

In addition, these above main types of analytics, some of the data scientists use various other types of analytics, particularly in Big Data analytics. **Diagnostic Analytics technique** is used when trying to determine why something happened and **Outcome Analytics** (consumption analytics) helps to identify customer behavior and learn how they are interacting with your products and services.

(Total 08 marks)

----- End of the suggested answer scheme -----