PAPER – 11 : FINANCIAL MANAGEMENT AND BUSINESS DATA ANALYTICS
SUGGESTED ANSWERS
SECTION – A

1.

(i)   (A)

(ii)   (C)

(iii)   (C)

(iv)   (A)

(v)   (C)

(vi)   (B)

(vii)   (C)

(viii) (B)

(ix)   (A)

(x)   (B)

(xi)   (A)

(xii)   (B)

(xiii) (D)

(xiv)   (B)

(xv)   (C)

SECTION – B

2. (a)

Primary Market	Secondary Market
It deals with new securities, i.e., securities which were not previously avail-able, and are offered for the first time to the investors.	It is a market for old securities which have been issued already and granted stock exchange quotation.
Securities are acquired from issuing companies themselves.	Securities are purchased and sold by the investors without any involvement of the companies.
It provides funds to new enterprises & also for expansion and diversification of the existing one and its contribution to company financing is direct.	It does not supply additional funds to company since the company is not involved in transaction.
It does not lend any liquidity to the securities.	The secondary market provides facilities for the continuous purchase and sale of securities, thus lending liquidity and marketability to the securities.
It is not rooted in any particular spot and has no geographical existence. it has neither any tangible form nor any administrative organizational set up.	Secondary markets have physical existence in the form of stock exchange and are located in a particular geographical area having an administrative organization.
Helps in creating new capital.	Helps in maintenance of existing capital.
Volume of transaction is low as com- pared to secondary market.	Volume of transaction is high as compared to primary market.

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2. (b)

Definition of Prescriptive Analytics:

Descriptive analytics describes what has occurred, diagnostic analytics explore why it occurred, predictive analytics describes what could occur, and prescriptive analytics describes what should be done. This approach is the fourth, final, and most sophisticated step of the business analysis process, and it is the one that urges firms to action by assisting executives, managers, and operational personnel in making the most informed decisions possible based on the available data.

How does the prescriptive analytics work?

Prescriptive analytics goes one step farther than descriptive and predictive analysis by advising the best potential business actions. This is the most sophisticated step of the business analytics process, needing significantly more specialised analytics expertise to execute; as a result, it is rarely utilised in daily company operations.

A multitude of approaches and tools - such as rules, statistics, and machine learning algorithms - may be used to accessible data, including internal data (from within the business) and external data, in order to produce predictions and recommendations (such as data derived from social media). The capabilities of machine learning dwarf those of a human attempting to attain the same outcomes.

The widespread misconception is that predictive analytics and machine learning are same. While predictive analytics uses historical data and statistical techniques to make predictions about the future, machine learning, a subset of artificial intelligence, refers to a computer system's ability to understand large and often enormous amounts of data without explicit instructions, and to adapt and become increasingly intelligent as a result.

Predictive analytics predicts what, when, and, most importantly, why something may occur. After analysing the potential repercussions of each choice alternative, suggestions may be made regarding which options would best capitalise on future opportunities or reduce future hazards.

Effectively conducted prescriptive analytics may have a significant impact on corporate strategy and decision making to enhance production, customer experience, and business success.

3. (a)

Current Liabilities	= ₹ 40,000
Current Assets	= ₹ 1,00,000
Stock	= ₹ 40,000

3. (b)

Statement of Sources and Application of Funds
For the year ended 31st March, 2023

Sources	₹	Applications	₹
Sale of Plant & Machinery	39,900	Redemption of Debentures	72,800
Refund of Tax	25,470	Payment of Dividend	4,70,350
Funds from Operation	7,16,730	Net increase in Working	2,38,950
	7,82,100	Capital	7,82,100

4. (a)

Common Size Income Statement

Particulars	2021-22 (%)	2022-23 (%)
Net Sales	100	100
Less Cost of Goods sold	54.3	47.8
Gross profit	45.7	52.2
Less: Operating Expenses	14.3	16
Operating profit	31.4	36.2
Less interest on debentures	5.7	3.8
Profit before Tax	25.7	32.4

Comment:

As compared to 2021-22, during 2022-23 the profitability of the company has improved significantly (from 25.7% to 32.4%). The major contributor of this increase is COGS which has declined considerably (from 54.3% to 47.8%). However, operating profit has not increased by similar margins because of increase in the Operating Expenses. Reduction in the interest burden has additionally contributed to the increase in the PBT.

4. (b)

Weighted Average Cost of Capital using Book Value weights   = 11.9%

Weighted Average Cost of Capital using Market Value weights = 11.294%

5. (a)

Net Present values (NPV) = ₹ 21,820

Comment: Since the Net present value of the project is ₹ 21,820 therefore the project should be accepted

5. (b)

Machine Premium-12 Year's Life:

Total NPV outflow = ₹ 64,19,920

Machine Standard-6 Year's Life:

Total NPV outflow = ₹ 49,41,824

Equated annual values:

Premium= ₹ 11,34,261

Standard =₹ 12,70,424

Decision: Since, annualized outflow for Premium is less, It is suggested to replace existing machine with Machine Premium.

6. (a)

Net Working Capital Required = ₹ 11,95,000

6. (b)

Computation of most Economical ordering quantity

Ordering quantity Size (kg)	400	500	1600	4000	8000
Annual total cost:	₹	₹	₹	₹	₹
Cost of material	96,000	94,400	92,800	91,200	89,600
Ordering cost	240	192	60	24	12
Carrying cost	480	590	1,856	4,560	8,960
Total annual cost	**96,720**	**95,182**	**94,716**	**95,784**	**98,572**

From the above calculations it is clear that the total annual cost of ₹ 94,716 is the lowest at on ordering quantity of 1,600 kgs;

Hence, the most economical ordering quantity is 1,600 kgs.

7. (a)

Value of the Firm and Overall Cost of Capital (K_0) under NI Approach:

Particulars	L	U
Value of the firm (₹)	32,00,000	20,00,000
Overall cost of capital (K_0)	9.375%	---

Calculation for Value of the Firm under NOI Approach:

Particulars	L	U
Market value of the firm (₹)	20,00,000	20,00,000

7. (b)

Degree of Operating Leverage   = 1.38
Degree of Financial leverage   = 1.03
Degree of Combined Leverage = 1.42

8. (a)

The emergence of big data has changed the world of business like never before. The most important shift has happened in the information generation and the decision-making process. There is a strong emergence of analytics that supports a more intensive data-centric and data-driven information generation and decision-making process. The data that encompasses the organization is being harnessed into information.

To make the data turn into user friendly information, it should go through six core steps:

- **Collection of data:** The collection of data may be done with standardized systems in place. Appropriate software and hardware may be used for this purpose. Appointment of trained staff also plays an important role in collecting accurate and relevant data.
- **Organising the data:** The raw data needs to be organized in an appropriate manner to generate relevant information. The data may be grouped, arranged in a manner that create useful information for the target user groups.
- **Data processing:** At this step, data needs to be cleaned to remove the unnecessary elements. If any data point is missing or not available, that also need to be addressed. The options available for presentation format for the data also need to be decided.

- **Integration of data:** Data integration is the process of combining data from various sources into a single, unified form. This step includes creation of data network sources, a master server and users accessing the data from master server.
- **Data reporting:** Data reporting stage involves translating the data into a consumable format to make it accessible by the users. For example, for a business firm, they should be able to provide summarized financial information e.g., revenue, net profit etc.
- **Data utilization:** At this ultimate step, data is being utilized to back corporate activities and enhance operational efficiencies and productivity for the growth of business. This makes the corporate decision making really 'data driven'.

8 (b)

Data analytics is the science of evaluating unprocessed datasets to draw conclusions about the information they contain. It helps us to identify patterns in the raw data and extract useful information from them. Applications containing machine learning algorithms, simulation, and automated systems may be utilized by data analytics procedures and methodologies.

Steps of data analytics

Following are the steps for data analytics:

- **Criteria for grouping data:** Data may be segmented by a variety of parameters, including age, population, income, and sex. The data values might be either numeric or category.
- **Collecting the data:** Data maybe gathered from several sources, including internet sources, computers, personnel, and community.
- **Organizing the data:** After collecting the data, it must be arranged so that it can be analyzed. Statistical data can be organised on a spread sheet or other programme capable of handling statistical data.
- **Cleaning the data:** The data is initially cleansed to verify that there are no duplicates or errors. The document is then examined to ensure that it is comprehensive. Before data is sent to a data analyst for analysis, it is beneficial to rectify or eliminate any errors by cleaning the data.
- Adopt the right type of data analytics approach like Descriptive analytics, Diagnostics analytics, Predictive analytics & Prescriptive analytics which helps the company in streaming theie processes, conserving resources and increasing their profitability.

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