

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

CLASS: MBA  
BRANCH: MBA

SEMESTER : III  
SESSION : MO/2025

**SUBJECT: MT547 BUSINESS FORECASTING**

TIME: 3 Hours

FULL MARKS: 50

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Establish the rationale behind using Business Forecasting techniques in business decision. [5]  
Q.1(b) Establish a business situation and discuss the logical aspects of using Quantitative methods (over Qualitative methods) in business forecasting [5]

- Q.2(a) Do Industry practitioners and Researchers use Regression as the most suitable method for business Forecasting? Validate your answer with a practical situation. [5]  
Q.2(b) The following table shows the Annual sales during the year 2017-2024 (in Lakhs). Determine 4-yearly centred Moving Averages values and interpret the result: [5]

Year	2017	2018	2019	2020	2021	2022	2023	2024
Annual Sales (Lakhs)	36	43	43	34	44	54	34	24

- Q.3 Identify i) a suitable Forecasting methodology for any of the following situations and ii) Implementation Strategy. (May use data to validate) [5+5]  
(ANY ONE)
- Expanding production capacity in a refractory plant in Odisha.
  - Estimating the demand for garments during the festival seasons.

OR

Design (i) a *Research Plan and Sampling Scheme*, and (ii) *Frame a Questionnaire for data collection* for the following Problem on pharma surveys; identifying focus groups:  
“DABUR INDIA is a well known company that provides wellness solutions to address the ever-growing needs of the customers. With a diversification strategy, the company wants to enter the Pharma products market, keeping its brand value in the Wellness market”.

- Q.4(a) “Forecasting Error along with Prediction will give the better Forecasting decision that either one”...discuss the logical aspects of using Forecasting Error as a minimization aspects. [5]  
Q.4(b) Given the forecast and actual demand, compute the Tracking Signal and MAD relating to Forecasting Error. [5]

Year	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Forecast Demand	78	75	83	84	88	85
Actual Demand	71	80	101	84	60	73

- Q.5(a) Discuss any TWO methods concerning business forecasting and applications: [5]
1. ARIMA models used as a Hybrid technique for Forecasting
  2. Moving Average used for Forecasting as a Time Series Analysis
  3. Box Jenkins Methodology used for Forecasting