

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

**CLASS: MBA/PRE-PHD
BRANCH: MANAGEMENT**

**SEMESTER : III/I
SESSION : MO/2023**

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) Define the rationale for using Forecasting in business decisions. [5]
Q.1(b) Discuss the usefulness of using Quantitative methods (over Qualitative methods) in business forecasting. [5]

- Q.2(a) The following table shows the Annual sales during the year 1991-1998. [5]
Determine 4-yearly centred Moving Averages values and interpret:

Year	1991	1992	1993	1994	1995	1996	1997	1998
Annual Sales (in Crores)	36	43	43	34	44	54	34	24

- Q.2(b) Do Researchers mostly use Regression as the most suitable method for business Forecasting? [5]
Validate your answer with a suitable real-life situation.

- Q.3 Design (i) a *Research Plan and Sampling Scheme*, and (ii) *Frame a Questionnaire for data collection* [5+5]
for the following Problem on pharma surveys; identifying focus groups:

"DR. REDDYS is a healthcare company based in Hyderabad that provides pharma solutions to address the evolving needs of patients. With a diversification strategy, the company wants to enter the wellness products market, keeping its brand value in the Pharma market".

OR

Identify i) a suitable Forecasting methodology for any of the following situations and ii) explain how it will be implemented. (May use data to validate)
(ANY ONE)

- Expanding production capacity in a steel plant.
- Estimating the demand for fruits during the festival.
- Human resources planning for a FMCG product.

- Q.4(a) Explain the usefulness of calculating Forecasting Error in a real-life situation. [5]
Q.4(b) Given the forecast and actual demand, compute the Tracking Signal and MAD relating to forecasting error. [5]

Year	1	2	3	4	5	6
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: [5x2]
1. ARIMA models
2. Box Jenkins methodology
3. Moving Average for Business Forecasting