BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION MO/2022)

CLASS: **MBA / PRE-PHD** **SEMESTER : III**
BRANCH: **MANAGEMENT** **SESSION : 2022-23**

SUBJECT: MT547 BUSINESS FORECASTING

TIME: **03 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*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

Q.1(a) Define the approach of Forecasting with relevance to business applications. [5]
Q.1(b) Discuss the suitability of using Quantitative methods in business forecasting. [5]

Q.2(a) The following table shows the average monthly coal production in millions of tonnes for 2007-2016. [5]
Determine 4-yearly centred Moving Averages values:

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Avg. monthly production	50	36.5	43	44.5	38.9	38.1	32.6	41.7	41.1	33.8

Q.2(b) Why is regression the most suitable method for business Forecasting? Answer with a suitable real-life situation. [5]

Q.3 Design (i) *Research Plan* and *Sampling Scheme*, and (ii) *Frame a Questionnaire for data collection* for the following Problem on consumer surveys; identifying focus groups: [5+5]
"NOVARTIS is a global healthcare company based in Switzerland that provides solutions to address the evolving needs of patients worldwide. With a diversification strategy, the company wants to enter into the market with wellness products, 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 is to be implemented. (May use data to validate) (ANY ONE) [5+5]

- Expanding production capacity,
- Estimating the demand for apparel,
- Human resources planning for a fast food joint,
- Introduction of a new model of mobile into the market

Q.4(a) Explain Exponential Smoothing for business forecasting with a real-life problem. [5]
Q.4(b) Given the forecast demand and actual demand for 10-foot fishing boats, 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 Discuss any ***TWO*** methods concerning business forecasting: [5x2]
(i) ARIMA models
(ii) Box Jenkins methodology
(iii) Business Forecasting: Qualitative vs Quantitative techniques
(iv) Moving Average for Business Forecasting

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