

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

CLASS: MBA
BRANCH: MBA

SEMESTER : III
SESSION : MO/19

SUBJECT: MT547 BUSINESS FORECASTING

TIME: 3.00Hrs.

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 Forecasting with relevance to business application. [5]
Q.1(b) Discuss suitability of using Quantitative methods in business forecasting with application. [5]

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

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) Determine the value of Trend for the following series using 3 year weighted Moving averages with weight 1, 2, 1. [5]

Year	1991	1992	1993	1994	1995	1996	1997
Values	2	4	5	7	8	10	13

- Q.3 Design (i) Research Plan with Sampling scheme and (ii) Frame a Questionnaire for data collection for the following problem on consumer surveys; identifying focus groups: *"BIOCON is well known company in pharmaceutical sector with lot of products in their segment. With a diversification strategy, company wants to enter into the market with wellness products; keeping its brand value in the Pharma market"*. [5+5]

- Q.4(a) Explain Exponential Smoothing for business forecasting with 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 forecast 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 with reference to business forecasting: [5+5]
1. ARIMA models
 2. BOX Jenkins methodology
 3. Business Forecasting: Quality vs. Quantitative techniques
 4. Forecast error