

Jagan Institute of Management Studies
End-Term Examination, September-October, 2017
Trimester I – PGDM (IB) 2017-19

Quantitative Techniques I
ET_IB_QT-I_0310

Time: 3 Hrs.

M. Marks: 70

INSTRUCTIONS: This Paper consists of TWO SECTIONS. Attempt any TWO from SECTION A and any FIVE questions including from SECTION B.

SECTION A

- Q 1** Discuss scope of statistics in decision making. Also discuss descriptive and inferential statistics with different levels of data measurement. Support the discussion with suitable examples. **10**
- Q 2** State and explain the importance of classification of data. Give a detailed discussion with suitable examples on types of classification. What are different charts and graphs we can be used present the data? **10**
- Q 3** Data collection is an important process for any statistical analysis. What are the key drivers in taking a decision about opting particular method of data collection? Differentiate primary and secondary data. Mention different methods of primary data collection with merits and demerits. **10**

SECTION B

- Q 4** Following are the income groups in a particular township of 100 residents. Find the average income along with median and modal income. Also determine the value above which top 10% income group lies. Find third quartile as well.

Income Groups	No. of batches
0 – 5	4
5 – 10	12
10 – 15	20
15 – 20	30
20 – 25	22
25 – 30	10
30 – 35	2

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- Q 5** You are given below the daily wages paid to workers in two factories X and Y

Daily Wages in 00' INR	No of Workers	
	Factory A	Factory B
2 – 3	15	25
3 – 4	30	40
4 – 5	44	60
5 – 6	60	35
6 – 7	30	20
7 – 8	14	15
8 – 9	7	5

Answer the following

- Which factory pays higher wages and by how much?
- In which factory wages are more consistent?
- Compare the skewedness' of the wages?

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- Q 6** The following data gives subject output of steel and relative unemployment in steel Industry. Find the percentage impact on relative impact of subject output of steel on relative unemployment in steel industry.

Year	Subject output of steel (in 000 tons)	Relative Unemployment in Steel Industry (In 000)
1968	8.5	60
1969	9.2	65
1970	9.3	61
1971	8.5	74
1972	7.2	92
1973	5.9	157
1974	5.1	130
1975	6.6	106
1976	7.9	58
1977	7.6	80
1978	8.2	52
1979	9.2	45

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- Q 7** A departmental store gives in-service training to its salesman. This is followed by a test. It is considering whether it should terminate the services of any sales man who does not do well in the test. The following data give the test scores and sales made by nine salesmen during a certain period. If the firm wants a minimum sales volume of Rs. 30,000 what is the minimum test score that will ensure continuation of service?

Test Scores: 14 19 24 21 26 22 15 20 19
 Sales ('000 Rs): 31 36 48 37 50 45 33 41 39 **10**

Q 8 Use multiplicative time series model to predict sales for 3rd and 4th quarter of 2017

Year	Quarter	Sales (In Million INR)
2014	1	11.2
	2	10.9
	3	12.6
	4	13.0
2015	1	12.5
	2	15.4
	3	13.4
	4	16.7
2016	1	15.3
	2	16.4
	3	17.0
	4	18.6

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Q 9 Calculate Fishers Ideal index number from the data given below and show that it satisfies the Time reversal and factor reversal test.

Commodity	Base Year		General Year	
	Quantity	Price	Quantity	Price
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	16	5	14

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