Jagan Institute of Management Studies
End-Term Examination, September, 2016
Trimester I – PGDM (RM) 2016-18

Quantitative Techniques
ET_RM_QT_2609

Time: 3 Hrs.   *M. Marks: 70*

INSTRUCTIONS: Attempt any SEVEN questions. All questions carry equal marks.

Q 1   Discuss in detail the importance of statistics with special reference to business and industry.   **10**

Q 2   If you were to conduct a survey regarding use of 'drugs' amongst residents of a town, what method of data collection would you adopt? Give reasons and explain that method of data collection in detail.   **10**

Q 3   Following data represents marks of students in a certain subject. Find arithmetic mean, median, mode D_7 and P_{60} for the data. Comment on Skewness of data.   **10**

Marks	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100	Total
Students	1	3	11	-	43	32	9	120

Q 4   Following data relate to the age of a group of government employees. Calculate standard deviation and coefficient of range.   **10**

Age	50 – 55	45 – 50	40 – 45	35 – 40	30 – 35	25 – 30	20 – 25
Frequency	25	30	40	45	80	110	170

Q 5   Find the coefficient of correlation between price and sales.

Price	100	90	85	92	90	84	88	90
Sales	500	610	700	630	670	800	800	750

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Q 6   A departmental store gives in-service training to its salesman. Which is followed by a test? It is considered whether it should terminate the service of any salesman who does not do well in the test. The following data gives the test score and sales made by nine salesman during a certain period

Test Scores	14	19	24	21	26	22	15	20	19
Sales ('00 Rs)	31	36	48	37	50	45	33	41	39

Does it indicate that the termination of services of low test score is justified? If the firm wants a minimum sales volume of Rs 3000. What

is the minimum test score that will ensure the continuation of service? Also estimate the most probable sales volume of a salesman making a score of 28. **10**

Q 7 In an examination 30% of the students have failed in mathematics, 20% of the students failed in chemistry and 10% failed in both mathematics and chemistry. A student is selected at random.

    i)   What is the probability that the student has failed in mathematics when it is known that he has failed in chemistry?

    ii)   What is the probability that the student has failed either in mathematics or in chemistry? **10**

Q 8 The odds in favour of A winning a game of chess against B are 3:2, if three games are to be played what are the odds (i) in favour of A's winning at-least two game out of three (ii) Against A losing the first two games to B. **10**

Q 9 In a certain examination the percentage of passes and distinction were 46 and 9 respectively. Estimate the average marks obtained by the candidates, the minimum pass and distinction marks being 40 and 75 respectively. (Assume the distribution of marks is normal).

Also determine what would have been the minimum qualifying marks for admission to a re-examination of the failed candidates, had it been desired that the best 25% of them should be given another opportunity of being examined. **10**

Q 10 Write short notes on any **TWO** of the following:

    a) Linear programming problem and its application in business.
    b) Transportation problem.
    c) Assignment problem.
    d) Poisson probability distribution. **10**

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