

Seat No.	
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M.B.A. (Part-I) (Semester - I) (New) Examination, May-2017

STATISTICS (Paper - III)

Quantitative Techniques for Management

Sub. Code : 68304

Day and Date : Friday, 05 - 05 - 2017

Total Marks : 80

Time : 11.00 a.m. to 2.00 p.m.

- Instructions :
- 1) Question No. 1 & 2 are compulsory.
 - 2) Attempt any two questions from question No. 3 to 5.
 - 3) Figures to the right indicate full marks.
 - 4) Use non-programmable calculator is allowed.

Q1) a) Define Mean and Mode. Complete Mean and Upper Quartile for the data given below. [10]

Class:	15-30	30-45	45-60	60-75	75-90	90-105	105-120
f :	9	12	24	30	26	13	6

- b) Define:
- i) Mutually exclusive events
 - ii) Equally likely events

A box contains 30 balls numbered from 1 to 30. A ball is drawn at random. Find the probability of getting

- i) A ball numbered multiple of 5 or 9
- ii) A ball numbered multiple of 5 or 6

Q2) a) Explain scatter diagram method of obtaining correlation. Compute Spearman's Rank correlation coefficient for the following data. [10]

X:	22	28	25	29	25	27	25	27
Y:	43	49	46	52	49	50	48	51

- b) The mean weight of 46 milk bags filled by machine 'A' is 15.8 kg with S.D. 0.49 kg and mean weight of 54 milk bags filled by machine 'B' is 16.2kg with S.D. 0.76 kg. Can it be regarded as there is no significant difference between average weights? [$Z_{table} = 1.96$, $Z_{table} = 1.64$] [10]

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- Q3) a) What are the requirements of good measure of dispersion? Compute mean deviation about median & its relative measure for the following data. [10]

Class:	10-20	20-30	30-40	40-50	50-60
f	8	12	20	13	7

- b) Define regression. Obtain a proper regression equation to estimate most probable value of cost of maintenance for a 9 years old car of the same make. [10]

Age of Car (yrs)	:	2	4	6	8
Cost of maintenance (in 00 Rs.):		10	20	25	30

- Q4) a) State p.m.f. of a poisson distribution and state its mean & S.D. A chance that a factory produces defective blade is $1/500$. The blades are supplied in packets of 10. Calculate number of packets containing [10]

- One defective
- Two defectives in a consignment of 10000 packets.

[Given $e^{-0.2} = 20.8187$, $e^{-0.02} = 0.9802$, $e^{-0.002} = 0.998$].

- b) Define
- Level of significance
 - Two tailed test. For a sample of married women the level of education and marriage adjustment score is as given below

Level of Education	Marriage adjustment score		
	Low	High	Very-High
College	95	61	54
High-School	34	36	40
Primary School	21	23	36

Test whether Marriage adjustment score is independent of Education level

[χ^2 at 8 d.f. = 15.507 and χ^2 at 7 d.f. = 9.488]

Q5) Write notes on any four:

- a) Laws of probability
- b) Characteristics of a good average
- c) Types of Correlation
- d) t-test
- e) Bays theorem
- f) Regression



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