Seat
No.

M.B.A. (Part - I) (Semester - I) (CBCS) (New)
Examination, December - 2017
QUANTITATIVE TECHNIQUES FOR MANAGEMENT
(Paper - III)
Sub. Code : 68304/57106

Day and Date : Friday, 22 - 12 - 2017
Time : 10.30 a.m. to 1.30 p.m.

Total Marks : 80

Instructions :
1) Q.No. 1 and 2 are compulsory.
2) Attempt any two questions from Q.3, Q.4, Q.5.
3) Figures to the right indicate full marks.
4) Draw neat diagrams if necessary.
5) Use of calculator is allowed.

Q1) The following are the monthly salaries of 20 workers in a firm. **[20]**
Rs. 1300, 620, 1450, 1180, 1250, 760, 1510, 1420, 1100, 980, 650, 1100, 1000, 1030, 710, 850, 800, 1220, 1320, 950.

The firm gives bonus of Rs. 100, 150, 200, 250 and 300 respectively in salary subgroups of Rs. 610-800, Rs. 810-1000, Rs. 1010-1200, Rs. 1210-1400 and Rs. 1410-1600.

Find :

a) Average bonus paid per worker.

b) Average salary of the workers.

c) Coefficient of variance for bonus paid and also for salary paid to these workers.

d) Comment on consistency of these two.

Q2) Explain Chi-square test for 2×2 table.

Calculate expected frequencies for the following data presuming the two attributes such as condition of the home and condition of child as independant.

Condition of Home →	Clean	Dirty
Condition of child clean ↓	70	50
Fairly clean	80	20
Dirty	35	45

Use chi-square test at 5% level of significance and state whether the attributes are dependant or independant? State the hypothesis clearly.

Given table value of ψ^2 (Chi-square) for 5% level.

Degrees of freedom	2	3	4
Table value	5.99	7.815	9.488

[10 + 10]

Q3) a) Why arith. mean is called as an ideal average? Find value of 'x' from following data if mean of this data is 58.5 Kg.

Weight in Kg.	50	55	60	62.5	70
Number of men	$(x-1)$	$(x+2)$	(x)	(x)	$(x-1)$

b) Explain various types of correlation. Find Spearman's rank correlation coefficient and comment.

Values of X	73	58	61	55	70	80
Values of Y	53	88	53	88	53	55

[10 + 10]

Q4) a) Define Poisson distribution and state its important properties.

Records shows that the probability is 0.00002 that a car will have a flat tyre while driving over a certain bridge. Use Poisson probability distribution to find the probability that among 20,000 cars driven over the bridge not more than two will have a flat tyre.

Given $e^{-0.2} = 0.819$, $e^{-0.4} = 0.67$.

b) Draw a neat sketch of normal curve and state properties of normal curve of the mean and S.D. of certain normal variate X are 44 and 18 respectively. Find

   i) Two quartiles.

   ii) Q.D.

   iii) M.D.

[10 + 10]

Q5) Attempt any four from following: [20]

   a) Define Binomial distribution. State its mean and S.D. Explain various events where Binomial can be used.

   b) State the equations of Regression lines and also the relation between correlation coefficient 'r' and Regression coefficients 'b_{xy}' and 'b_{yx}'.

   c) Write a note on paired 't' test.

   d) Explain Type I and Type II error in testing of hypothesis.

   e) State and prove addition law of probability.

   f) Z test for testing difference between two means. Explain test procedure.

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