[A-2 / A-3]

SARDAR PATEL UNIVERSITY
BBA (General) SEMESTER-IV EXAMINATION (NC) (2010 Batch)
Monday, 16 April,
2018
10.00 A.M. TO 12.00 P.M.
UM04CBBA04/09: STATISTICS FOR MANAGEMENT-II

Total Marks: 60

Q.1 [A] Write a note on simple random sample. [07]

[B] Explain systemic sampling. Write merits and limitations of it. [08]

OR

Q.1 [A] Write characteristics of ideal sample. [07]

[B] Explain stratified sampling. Write merits and limitations of it. [08]

Q.2 [A] What is testing of hypothesis? Explain: One-tailed and two-tailed test and Type I and Type II error. [07]

[B] A consumer's group is suspicious about the weight of certain brand of cereal for which the boxes are labeled as containing 12 ounces. A random sample of 50 boxes yields an average weight of 11.6 ounces with a standard deviation of 1.68 ounces. Test the hypothesis that the population mean weight is 12 ounces, at the 0.05 level of significance. [08]

OR

Q.2 [A] A sample of 80 steel wires produced by factory A yield a mean breaking strength of 1240 pounds with a standard deviation of 120 pounds. Another sample of 100 steel wire produced by factory B, on the other hand, yields a mean breaking strength of 1180 pounds, with a standard deviation of 105 pounds. Can it be concluded that the mean breaking strength of wires produced by factory A is greater than that of factory B? Test at 5% level of significance. [07]

[B] The mean yield of two sets of plots and their variability are as given below. Examine whether the difference in the variability in yields is significant at 5% level of significance. [08]

	Set of 40 plots	Set of 60 plots
Mean yield per plot	1258 lb.	1243 lb.
S.D. per plot	34	28

Q.3 [A] What is t-test? Write its applications. Also write two differences between small sample and large sample test. [07]

[B] The percentage scores of a random sample of 12 candidates in a management institute in a statistics examination were: [08]

   69 74 32 48 42 68 57 86 56 56 35 72

Assuming that these scores are from normal distribution, test at 5% level of significance that the mean score of the population of students is 58.

OR

C.P.T.O.)

Q.3 **[A]** It is suspected that difference of ambient temperature may be affecting the results of an experiment. The experiment was conducted several times under 'hot' and 'cold' ambient temperatures, out of which samples are taken randomly. **[7]**

With the ambient temperature "hot" the results were:

  4.61 4.62 4.66 4.59 4.58 4.60

With the ambient temperature 'cold' the results were:

  4.57 4.61 4.55 4.59

Are the means of two sets of results significantly different at 5%.

[B] Ten persons were appointed in an office. Their performance was recorded at the time of entry by a test with score out of 100. After three months training, they were assessed again. Given below are scores out of 100. Have they gained from the training? Use 5% level of significance. **[8]**

Before	80	76	92	60	70	56	74	56	70	56
After	84	70	96	80	70	52	84	72	72	50

Q.4 **[A]** What is analysis of variance? Explain one way and two ways ANOVA. **[07]**

[B] The time taken by workers in performing a job by method I and method II is given below. **[08]**

Method-I	20	16	26	27	23	22	
Method-II	27	33	42	35	32	34	38

Do the data show that the variances of time distribution from population from which these samples are drawn do not differ significantly?

OR

Q.4 **[A]** An automobile company provides you with the following information about age groups and the liking for a particular model of a car which it plans to launch: **[07]**

People who	Below 25	Age 25-50	50 and above
Liked the car	45	30	25
Did not like the car	55	20	25

On the basis of these data, can it be concluded that the model appear is independent of the age of the respondent? Use 5% level of significance.

[B] The following data related to job stress quotients for 20 randomly selected managers in a large organization: **[08]**

Managerial levels			
Low	Middle	Upper	Top
73	51	36	78
84	58	38	64
60	83	46	63
53	56	72	61
74	40		42
49			

Do these data support the hypothesis that there is a difference between mean stress quotients for the four levels of managers? Use 5% level of significance.

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