

BVM COLLEGE OF MANAGEMENT EDUCATION, GWALIOR

Second Internal Exam Sept.2015

MBA-I

Business Statistics (105)

Very short questions :-

- Q1 What is an index number? Example with example the importance of index numbers in economics & and business studies.
- Q2 What are components of a time series and why?
- Q3 Explain how the student's t distribution may be used
- Q4 Define association of attributes. How would you calculate it?

Short questions:-

- Q1 What is sampling? What are its objects?
- Q2 write short notes on the following –
(1) Limitation of the tests of significance
(2) Degree of freedom
- Q3 Define association and discuss the method by which it is measured.

Long questions:-

- Q1 What is 't' test? The heights (in inches) of 10 students selected at random from students of a university are as follows on the basis of these figures will it be correct to conclude that the mean height of university students is 68''?
61, 62, 63, 65, 66, 67, 68, 69, 69, 70 ($t_{0.05}=2.262$ for d.f.= 9)
- Q2 The sale data of an item in six shops before and after a special promotional campaign are as under can the campaign be judged to be a success? Test at 5% level of significance.
- | Shops | A | B | C | D | E | F |
|-----------------|----|----|----|----|----|----|
| Before campaign | 53 | 28 | 31 | 48 | 50 | 42 |
| After campaign | 58 | 29 | 30 | 55 | 56 | 45 |
- Q3 Two random samples drawn from two normal population are as under obtain estimates of the variances of the population and test whether the two population have the same variance. Use F test.
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|-----------|----|----|----|----|----|----|----|----|----|----|----|----|
| Sample I | 20 | 16 | 26 | 27 | 23 | 22 | 18 | 24 | 25 | 19 | | |
| Sample II | 17 | 23 | 32 | 25 | 22 | 24 | 28 | 18 | 31 | 33 | 20 | 27 |
- Q4 1660 candidates appeared for a competitive examination and of these 422 were successful. 256 had attended a coaching class and of these 150 come out successful. Estimate the utility of the coaching class.
- Q5 There was an outbreak of small pox in a locality. Of 254 persons who were uninoculated 20 contracted the disease ,12 of them dying . of 294 persons who were inoculated, 6

contracted the disease and there were no deaths. Trace the association between
(1) inoculation and contracting the disease (2) Inoculation and mortality among persons who have contracted the disease.

- Q6 Calculate the trend value by using the method of least squares from the following data and also state the annual rate of change.

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Value	112	127	117	137	152	167	157	177	182	202

- Q7 A certain medicine given to each of the 9 patients resulted in the following increase of blood pressure. Can it be concluded that the medicine will in general be accompanied by an increase in blood pressure?

7 3 -1 4 -3 5 6 -4 -1

(for d.f. =8, $t_{0.05}$ is 2.306 and $t_{0.10} = 1.860$)

- Q8 In a co educational institution out of 200 students 150 were boys. They appeared in an examination and it was found that 120 passed. 10 girls had failed. Is there any association between sex and success in the examination?

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