

FIRST SEMESTER M.B.A. DEGREE EXAMINATION, JANUARY 2014

BUS IC 08—QUANTITATIVE TECHNIQUES

(2013 Admissions)

Time : Three Hours

Maximum : 36 Weightage

PART A

Answer the following. Each question carries 1 weightage

1. Find out the probability in getting Heads at least twice in four tosses of a coin.
2. State the importance of Exponential distribution.
3. Discuss the difference between Standard Deviation and Quartile Deviation.
4. What is chi square test?
5. Under what circumstances do you use Krushkal Wallis Test?
6. What do you mean by inferential statistics?

(6 X 1=6)

PART B

Answer any Six of the following. Each question carries 3 weightage

7. Bring out the business applications of probability with examples.
8. Discuss Expected value of random variable?
9. A and B play a game in which their chances of winning are in the ratio 3:2. Find A's chances of wining (i) at least three games out of five games they played (ii) at the most 2 games out of five they played (iii) no games out of five the played.
10. On an average 3 two wheelers in 1000 in a city has met with an accident during a year. If there are 5000 two wheelers in the city, what is the probability that i) exactly 3 ii) not more than 2 iii) at least one will have met with an accident during the year?
11. Briefly explain the methods of probability sampling.
12. The mean of a binomial distribution is 2 and standard deviation is $\frac{6}{5}$. Calculate the probability that the value of random variable X is i) less than or equal to 3, ii) equal to 4 and iii) at least 4.
13. In a Workshop motors break down at an average rate of 6 per day, the number of breakdowns being Poisson distributed. The present unqualified mechanic can repair motors at an average rate of 8 per day and is paid a daily wage of Rs. 500. A qualified mechanic offers his services at a daily wage of Rs. 800 and is capable of repairing on average 10 motors per day. Whenever motor is idle there is a down time cost incidence at the rate of Rs. 600/- per day. Would it be worthwhile to employ the qualified mechanic in lieu of the present mechanic?
14. Explain any two tests under the non parametric testing.

(6 X 3 = 18)

Turn over

PART C

Answer any two of the following. Each question carries 6 weightage

15. In Alpha Alpha Factory, the distribution of salary of workers is given as follows:

Salary	1000-2000	2000-3000	3000-4000	4000-5000	5000-6000
Number of Employees	25	35	60	40	20

Find the mean salary, median salary and mode of the salary distribution and comment on the symmetry of the distribution.

16. The following table shows the aptitude test scores and the productivity indices of 8 randomly selected workers. Find the coefficient of correlation for the aptitude test score and productivity index.

Aptitude test Scores	75	58	59	60	61	62	64	65
Productivity index	67	68	65	68	70	72	70	49

17. Precision Parts is a job shop that specializes in producing electric motors shafts. The average shaft size for the E300 electric motor is 0.75 inch, with a standard deviation of 0.1 inch. It is normally distributed. What is the probability that a shaft selected at random will be between 0.60 and 0.85 inch?

(2 X 6 = 12)