College of Applied Business (CAB)
Sent-up Examination, February 2015

BBA / Third Semester / STT 201: Business Statistics

Candidates are required to give their answers in their own words as far as practicable.

Section A   **Time 20 minutes**
Brief answer questions. Attempt ANY FIVE.   [5×2=10]

1. Define central tendency. Write various measures of central tendency.
2. Find the variance of first nine natural numbers.
3. Find coefficient of Skewness from the given: n=10, $\bar{x}=12$, $\sum x_i^2 = 1530$ and mode=15.
4. If three coins are tossed simultaneously then what is the probability of obtaining at least on head?
5. Find expectation of number of points when a die is rolled?
6. Let $X \sim B(10, \frac{1}{3})$ then find the Mode of the distribution.
7. Write the Mean and Standard Deviation of Standard Normal Variate (SNV).

Section B   **Time 30 minutes**
Short answer questions. Attempt ANY TWO.   [2×5=10]

8. Determine Mode of the given distribution

x_i:	10	11	12	13	14	15	16	17	18
f_i:	3	6	2	10	9	8	7	2	5

9. Given the following:

   Set I   Set II
   $n_1 = 12$ $n_2 = 20$
   $\bar{x_1} = 4$ $\bar{x_2} = 5$
   $\sigma_1 = 2$ $\sigma_2 = 3$

   Find the combined standard deviation of 32 observations of two sets.
10. Make a box and whisker plot of the given data:

    173   206   179   257   198   251   239   246   295   181   261
11. A bag contains 4 red, 6 white and 5 black balls. Three balls are drawn randomly from a bag. Find the probability of drawing (a) two red balls (b) at least one red colour balls?
12. Write the characteristics of Normal distribution.

Section C   **Time 80 minutes**
Long answer questions. Attempt ANY TWO.   [2×10=20]

13. Which types of bulb has more uniform life, from the given distribution?

Length of life (hours)	Number of bulbs	
	A	B
0-4	4	5
4-8	11	9
8-12	25	30
12-16	12	12
16-20	8	4

14. In a binomial distribution with 6 independent trials the probabilities of 3 and 4 successes are found to be respectively 0.2457 and 0.0819. Find the parameter 'p' of the distribution. Also find $p(x \geq 4)$?
15. (a) If 4% of the bulbs manufactured by a company are defective, find the probability that in a sample of 125 bulbs, none is defective?
    (b) Incomes of a group of 10,000 persons were found to be normal distributed with mean Rs. 520 and standard deviation Rs. 60. Find the lowest income of the richest 500.