March -2015

B. B. A. Semester – II Code:2871

Paper – 205 [Business Statistics]

Time : $2\frac{1}{2}$hours Total Marks:70

Instructions: 1. There are FIVE compulsory Questions .
2. All Questions carry equal marks.
3. Use of Calculator is permitted.

Q-1 a) State the characteristics of a good average. 7

b) From the following data compute – Mean, median and mode of the distribution. 7

Heights (in cms)	Number of Students
141 - 150	6
151 - 160	28
161 - 170	48
171- 180	30
181 - 190	8

OR

Q-1 a) State various measures of dispersions. Which is the best? Why? 8

b) The monthly profits (in Rs) of 100 shops are distributed as follows : 6

Profits :	0 - 100	100 - 200	200 - 300	300 - 500	500 - 600	600 - 800
No. of Shops:	19	21	30	40	10	12

Calculate mean and standard deviation of the distribution.

Q-2 a) Define the following terms: 5

i) Event,
ii) Equally likely events,
iii) Mutually exclusive events,
iv) Exhaustive events,
v) Independent events

b) Three coins are tossed simultaneously Find the probability that - 9

(i) No head.
(ii) One head.
(iii) Atleast two heads.
(iv) Atmost two heads appear.

OR

Q 2. a) i) State addition theorem of probability for 2 events. 6

ii) Define conditional probability of two events.

iii) State multiplication theorem of probability for 2 independent events.

b) A bag contains 6 red and 8 black balls. Another bag contains 7 red and 10 black balls. A bag is selected and a ball is drawn. Find the probability that it is a red ball. 8

Q-3 a) Give the probability mass function of binomial distribution. State its characteristics. 5

b) 20 wrist watches in a box of 100 are defective. If 10 watches are selected at random, find the probability that 9

(i) 10 are defective
(ii) 10 are good,
(iii) At least one watch is defective

OR

Q-3 a) Give the probability mass function of Poisson distribution. State the properties of Poisson distribution. 8

b) If 2% of electric bulbs manufactured by a certain company are defective. Find the probability that in a sample of 200 bulbs 7

i) less than 2 bulbs,
ii) more than 3 bulbs are defective. [$e^{-4} = 0.0183$].

Q-4 a) Distinguish between Correlation and Regression. 6

b) The following calculations have been made for closing price of 12 stocks registered on Bombay Stock Exchange on a certain day along with the volume of sale (in thousands) of shares (X) with 8

$\sum X=580$, $\sum Y = 370$, $\sum XY = 11494$, $\sum X^2 = 41658$, $\sum Y^2 = 17206$. Using this information obtain –

i) Regression lines of X on Y and that of Y on X.
ii) Correlation coefficient between X and Y, if exists.

OR

Q-4 a) State the properties of Regression. 5

b) Find the correlation Coefficient between sales and advertising expenditure from the following Data. 9

Sales(Crores Rs.) :	65	66	67	67	68	69	70	72
Adv. Expenditure (in Laks) :	67	68	65	68	72	72	69	71

Q-5 a) Explain giving example the following terms: 8

i) Population and Sample.
ii) Parameter and Statistic.

b) Write a note on "Census". 6

OR

Q-5 a) State different types of probability sampling and non-probability sampling. 8

b) Write a note on " Simple Random Sampling". 6