AV–84

B.B.A. (Part—I) Examination
BUSINESS STATISTICS

Time : Three Hours]   [Maximum Marks : 80

1.   Calculate geometric mean :

     2.7563, 11.2542, 0.6667, 0.7795, 0.0003, 0.0097, 0.0001.   16

OR

The runs scored by the players are given below :

Runs	Players
0	3
1	5
2	6
3	10
4–6	20
7–10	21
11–16	8
17–21	7

Find out Mean and Median.   16

2.   Calculate the standard deviation from the following data :

Temp. "C"	No. of days
– 40 to – 30	10
– 30 to – 20	28
– 20 to – 10	30
– 10 to 0	42
0 to 10	65
10 to 20	180
20 to 30	10

16

OR

In which of them there is a greater variation in wages :

| Weekly wages | No. of workers | |
	Factory A	Factory B
Below 10	20	15
10 – 15	18	20
15 – 20	30	35
20 – 25	25	30
25 – 30	20	18
30 – over	15	17

16

3. (a) A bag contain 8 white balls and 12 black balls. Find out the probability of drawing a white ball. 4

    (b) In a lottery there are 10 prizes and 90 blanks. If a person holds one ticket what are the chances of getting the prize and what are the chances of getting the blank ? 4

    (c) Find the chance that if a card is drawn at random from an ordinary pack it is one of the court cards. 4

    (d) What is the probability of getting a total of at least 9 in single throw of 2 dice ? 4

OR

    (e) Suppose from a pack of 52 cards one card is drawn at random that is king. 4

    (f) Find the probability of drawing a king, a queen and a knave, in that order from a pack of cards in three consecutive draws, the card drawn not being replaced. 4

    (g) Find the probability of getting 3 and 5 in throwing of dice. 4

    (h) Tickets numbered 1 to 100 are well shuffled and a number is drawn. What is the probability that the ticket will be an odd number ? 4

4. (a) Find out Rank Correlation from the following data :

    X : 3   4   6   8   10

    Y : 9   10   13   18   17 4

    (b) Find out correlation :

    $\Sigma dxdy = 42075$, $\eta = 450$, Standard Deviation of 'X' Series = 12, Standard Deviation of 'Y' Series = 16. 4

    (c) Find out correlation :

    (i) Total of product of deviation of 'X' and 'Y' series from their respective mean = 122

    (ii) Variance of X = 36

    (iii) Variance of Y = 64

    (iv) n = 30 4

    (d) Find out correlation :

    (i) $\Sigma xy = 5$

    (ii) $\Sigma x^2 = 114$

    (iii) $\Sigma y^2 = 19$

    (iv) $\eta = 5$ 4

OR

(e) Find out Regression Coefficients. Following information is given on the basis of two way frequency table :

$n = 50$, $\Sigma fdxdy = 26$; $\Sigma fdx = 15$; $\Sigma fdy = 10$; $\Sigma fdy^2 = 68$; $\Sigma fdx^2 = 73$; $ix = 5$; $iy = 10$.

Find out Regression Coefficient of x on y.　　　　4

(f) (i) Bxy = 0.204

　　(ii) Byx = 0.029

　　(iii) Actual mean of 'x' series = 59

　　(iv) Actual mean of 'y' series = 67.5

Prepare Regression equation of y on x.　　　　4

(g) Regression equations are given below :

　　x on y = 1.359y − 5.13

　　y on x = 0.613x + 14.83

Find out the value of 'x' when y is 70.　　　　4

(h) Given data :

　　$n = 450$; $\Sigma dxdy = 42075$; $\sigma x = 12$; $\sigma y = 16$

Find out Regression Coefficient.　　　　4

5. (a)

Commodities	2015		2016	
	Price	Quantity	Price	Quantity
A	2	50	3	60
B	7	10	9	12
C	10	7	12	8
D	3	2	4	3

Calculate simple aggregative index number.　　　　4

(b) Calculate chain base Index Number from the following :

Year	2012	2013	2014	2015	2016
Price	175	200	250	300	280

4

(c) Find the simple aggregative quantity index number from the following data :

Articles	Quantity	
	Base Year	Current Year
A	700	950
B	460	800
C	1,300	2,150
D	1,900	3,800

4

(d) From the following details construct an Index No. for 2015 taking 2013 as base by the price relative method of geometric mean for averaging relatives :

Commodities	A	B	C	D	
Price (2013)	20	40	60	80	
Price 2015	26	34	120	140	4

<div align="center">OR</div>

(e) Explain the meaning of time series. 4

(f) What are the components of time series ? 4

(g) Explain the need of time series. 4

(h) Explain the types of time series. 4