NP – 376

III Semester B.B.A. Examination, January/February 2025
(NEP) (F+R)
BUSINESS ADMINISTRATION
Paper – 3.3 : Business Statistics

Time : 2½ Hours | Max. Marks : 60

Instruction *: Answer should be written in* ***English only****.*

SECTION – A

1. Answer **any 6** sub-questions. **Each** sub-question carries **2** marks. **(6×2=12)**

   a) State the objectives of statistics.

   b) Give the meaning of quantitative classification.

   c) What do you mean by frequency polygon ?

   d) What is positional average ?

   e) State the methods of construction of index number.

   f) What is probable error ?

   g) $\bar{X} = 20.2$, Me = 22.1, Z = ?

   h) The arithmetic mean runs scored by the 2 batsmen x and y in a cricket series of 10 innings are 50 and 48 respectively. The standard deviations of their runs are 15 and 12 respectively. Who is the most consistent player ?

SECTION – B

Answer **any three** of the following questions. **Each** question carries **4** marks. **(3×4=12)**

2. In a trip organised by a college, there were 80 persons each of whom paid Rs. 21 on an average. There were 60 students, each of whom paid Rs. 22. Member of the teaching staff were charged at higher rate. The number of servants were 6 (all males) and they were not charged anything. The number of females was 20 percent of the total of which one was a lady staff member. Tabulate the information.

P.T.O.

3. Obtain the two regression equation from the following data when the deviation are obtained from mean.

   $N = 20$

   $\overline{x} = 4, \overline{y} = 2$

   $Ex^2 = 1680$

   $Ey^2 = 320$

   $Exy = 480.$

4. Calculate arithmetic mean.

Income ('000)	**Number of Families**
More than 0	100
More than 10	95
More than 20	82
More than 30	60
More than 40	45
More than 50	36
More than 60	20
More than 70	10

5. Two judges gave the following ranks to a series of music contestants. Examine the relationship between their judgement.

   Judge 'A' = 8, 7, 6, 3, 2, 1, 5, 4.

   Judge 'B' = 7, 5, 4, 1, 3, 2, 6, 8.

6. Construct a cost of living index.

Item	**Index**	**Weights**
Food	323.79	50
Clothing	310.00	10
Lighting	220.00	08
Rent	150.00	12
Misc.	300.00	20

SECTION – C

Answer **any 3** questions. **Each** question carries **12** marks. **(3×12=36)**

7. The annual profit in lakh of rupees of 200 companies are as follows.

Profit	0 – 50	50 – 100	100 – 150	150 – 200	200 – 250	250 – 300
No. of Company	24	36	54	40	34	12

Draw both the ogives and locate median.

8. Calculate mode.

x	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35
f	1	3	10	6	10	9	1

9. The following are the results of final BBA examinations in a college.

Age of Candidates	19 – 20	20 – 21	21 – 22	22 – 23	23 – 24	24 – 25
Candidates Appeared	120	100	70	40	10	5
Successful Candidates	72	55	35	18	4	1

Calculate co-efficient of correlation between age and success.

10. The following results of capital employed and profit earned by a firm in 10 successive year are calculated.

	Rs. in '000	
	Mean	**Standard deviation**
Capital employed (x)	55	28.7
Profit earned (y)	13	8.5
Correlation co-efficient	0.96	

i) Obtain two regression equations.

ii) Estimate the amount of profit to be earned if capital employed is Rs. 60,000.

iii) Estimate the amount of capital to be employed if profit earned is Rs. 30,000.

11. Compute Fisher's ideal index and test whether it satisfies the Reversibility tests.

	Base year		Current year	
	Value Rs.	**Price Rs.**	**Value Rs.**	**Price Rs.**
A	50	5	72	6
B	84	6	80	8
C	80	8	96	8
D	20	10	30	10
E	56	7	64	8