

3/101

1305E602

Candidate's Seat No: \_\_\_\_\_

IMBA (IIS)(NEP) Sem.4 Examination

BSDA

May-2025

Time : 2.00 Hours]

[ Max. Marks : 50

**Instructions:**

1. The figures on the right-hand side indicate marks.
2. Use of calculators is **Allowed**.

Q-1 (a) State the Characteristics of an Ideal Questionnaire.

[5 MARKS]

Q-1 (b) Figures regarding the sales (in thousand rupees) of different items in a super mall during four weeks are as follows:  
 228, 220, 200, 230, 125, 130, 128, 135, 100, 80, 120, 127, 90, 95, 85, 100, 115, 160, 185, 145, 125, 180, 140, 150, 230, 200, 265, 210.  
 Construct a frequency distribution by classifying these data into 8 classes.

[5 MARKS]

OR

(a) State the precautions to be taken while using Secondary Data.

[5 MARKS]

(b) The following frequency distribution of unequal class length is obtained for some data.  
 Prepare a frequency distribution stating class length and mid value of each class.

Classes	0-20	20-50	50-70	70-90	90-100	Total
Frequency	20	30	30	15	5	100

[5 MARKS]

Q-2 (a) The data on monthly expenses of two different families living in a city are given below.  
 Present it through simple divided bar diagram.

Monthly expense (in Rs.)	Family A	Family B
Food	8100	7000
Clothing	2700	2000
Education	2880	2000
Fuel	1800	3000
Rent	1620	4000
Other	900	2000
Total	18,000	20,000

[10 MARKS]

OR

E602-2

- (a) The following data shows the profits (in Rs.) of 50 small scale industrial units. Obtain the value of mode using graphical method.

Profit (in Rs.) (in thousand)	No. of Companies
20 – 40	2
40 – 60	13
60 – 80	22
80 – 100	9
100 – 120	4

[10 MARKS]

- Q-3 (a) Out of 300 persons residing in a region, a sample of 30 persons is selected at random and the heights (in cm.) of these selected persons are as under:

163, 150, 146, 148, 152, 155, 151, 145, 159, 162, 141, 150, 145, 162, 161, 152, 168, 153, 149, 148, 162, 158, 158, 160, 153, 149, 154, 149, 141, 165.

- Distribute these data into 6 classes and also find the mid value of each class.
- Obtain 'less than' type cumulative frequency distribution.
- What is the percentage of persons having height less than 155 cm?
- Obtain 'more than' type cumulative frequency distribution.
- How many persons have the height between 147 to 157 cm?

[10 MARKS]

OR

- (a) Explain the conditions for parallelism and perpendicularity of lines in terms of their slopes.

[5 MARKS]

- (b) Define various forms of the equation of a line.

[5 MARKS]

- Q-4 (a) From the following data calculate price index numbers for 2005 with 1995 as base by:

- (i) Laspeyre's, (ii) Paasche's, (iii) Marshall-Edgeworth and (iv) Fisher's formulae.

Commodities	1995		2005	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

[10 MARKS]

OR

- (a) The table shows the average wages in rupees per hour of workers in a factory during the year 1987 to 1998. So also are given the Consumer Price Indices for these years with 1987 to 1989 as the base period.

Determine the real wages of the rail road workers during the years 1987-1998 as compared to their wages in 1987.

Use the Consumer Price Index to determine the purchasing power of a rupee for the various years assuming that in 1987.

Year	Average wage of workers in Rs. per hour	Consumer Price Indices (1987-89) as base period
1987	119	95.5
1988	133	102.8
1989	144	101.8
1990	157	102.8
1991	175	111.0
1992	184	113.5
1993	189	114.4
1994	194	114.8
1995	197	114.5
1996	213	116.2
1997	228	120.2
1998	245	123.5

[10 MARKS]

**Q-5 Attempt any ten out of twelve.**

[10 MARKS]

- 1) State the formula of weighted mean.
- 2) State the formula for obtaining the 80<sup>th</sup> Percentile.
- 3) State any two advantages of Mode.
- 4) State two advantages of geometric mean.
- 5) State the formula for obtaining the lower and upper boundary points of a class.
- 6) State the formula for Area of the triangle.
- 7) From the following which is the method of collecting primary data?
  - a) Direct inquiry
  - b) Indirect inquiry
  - c) Method of questionnaire
  - d) All of the above
- 8) Which one of the following is true for secondary data?
  - a) Should be never used
  - b) Use after careful verification
  - c) It is not necessary to check while using it.
  - d) Secondary data itself is a primary data.
- 9) State the Section Formula.
- 10) State Irving Fisher's 'Ideal' Index Numbers.
- 11) State any two uses of Tabulation.
- 12) State the formula for distance of a point from a line.

\*\*\*\*\* END OF PAPER \*\*\*\*\*