CAIIB JUNE EXAM 2025

2 HOURS NON STOP

NUMERICAL & CASE STUDY

ABM

Class-2

29 MAY 2025

09:00 PM

LIVE STREAMING

@JAIIB CAIIB BABA

Q.31 The following are the marks obtained by 7 students in a test:
Marks: 12, 15, 17, 20, 22, 24, 30
Calculate:
(i) Range and Coefficient of Range
(ii) Quartile Deviation (Q.D.) and Coefficient of Quartile Deviation

a) Range = 18, Coeff. of Range = 0.43, Q.D. = 5, Coeff. of Q.D. = 0.33
b) Range = 18, Coeff. of Range = 0.43, Q.D. = 4.5, Coeff. of Q.D. = 0.23
c) Range = 20, Coeff. of Range = 0.45, Q.D. = 5.5, Coeff. of Q.D. = 0.30
d) Range = 18, Coeff. of Range = 0.42, Q.D. = 6, Coeff. of Q.D. = 0.35

Q.32 Given the data:

X	10	20	30	40	50
Y	15	25	35	45	55

What is the correlation coefficient (r) between X and Y?

a) 0.85
b) 0.95
c) 1
d) 0.5

B

Q.33 Given:

- $\sum(x-\bar{x})(y-\bar{y})=740$
- Variance of x=204
- Variance of y=506
- Number of observations n=20

Find the correlation coefficient ?

a) 0.72
b) 0.81
c) 0.57
d) 0.92

When the number of cars is increasing, accidents are also increasing. But in this city, there are many minor traffic violations happening during weekends with parades, and rallies.

X- Parades rallies	20	30	10	12	15	25	34
Y- Accident	6	9	4	5	7	8	9

34. The traffic chief wants to predict the number of accidents in the next week when he expects 33 rallies.

35. Calculate the std. error of estimate.

- $y = a + bx$
- $b = \Sigma xy - \Sigma x^* \Sigma y / \Sigma x^2 - \Sigma(x)^2$
- $a = \bar{Y} - b\bar{X}$

X	Y	x^2	XY
20	6	400	120
30	9	900	270
10	4	100	40
12	5	144	60
15	7	225	105
25	8	625	200
34	9	1156	306
146	48	3550	1101
Mean = 20.86	6.86	507.14	157.29

$b = 157.29 - 20.86*6.86 / 507.14 - (20.86)^2$

$= 157.29 - 143.1 / 507.14 - 435.14$

$= 14.19 / 72 = 0.197$

$a = \bar{Y} - b\bar{X}$

$= 6.86 - 0.197*20.86$

$= 2.751$

$y = a + bx$

$= 2.751 + 0.197x$

X	Y	x^2	XY
20	6	400	120
30	9	900	270
10	4	100	40
12	5	144	60
15	7	225	105
25	8	625	200
34	9	1156	306
146	48	3550	1101
Mean = 20.86	6.86	507.14	157.29

$b = 157.29 - 20.86*6.86 / 507.14 - (20.86)^2$

$= 157.29 - 143.1 / 507.14 - 435.14$

$= 14.19 / 72 = 0.197$

$a = \bar{Y} - b\bar{X}$

$= 6.86 - 0.197*20.86$

$= 2.751$

$y = a + bx$

$= 2.751 + 0.197x$

$x = 33$

$= 2.751 + 0.197 *33$

$= y = 9.252 = \text{approx. } 9$

X	Y	x^2	y^2	XY
20	6	400	36	120
30	9	900	81	270
10	4	100	16	40
12	5	144	25	60
15	7	225	49	105
25	8	625	64	200
34	9	1156	81	306
146	48	3550	352	1101
Mean = 20.86	6.86	507.14	50.29	157.29

b= 0.197

a = 2.751

$Se = \sqrt{y^2 - ay - bxy / n-2}$

$= \sqrt{352 - 2.751*48 - 0.197*1101 / 7-2}$

$= \sqrt{352 - 132.048 - 216.897 / 5} = \sqrt{3.055/5} = \sqrt{0.611}$

$= 0.78$

36. If the mean of the following distribution is 54, find the value of x.

Class Interval	0-20	20-40	40-60	60-80	80-100
F	7	X	10	9	13

CI	F	Mid Point(X)	FX
0-20	7	10	70
20-40	X	30	30x
40-60	10	50	500
60-80	9	70	560
80-100	13	90	1170
Total	N= 39+x		2300 +30x

a. 10
b. 8
c. 12
d. 13

B

37 Find Mode for data

Class Interval	20-30	30-40	40-50	50-60	60-70
Frequency	8	26	30	20	16

Class Interval	Frequency
20-30	8
30-40	26
40-50	30
50-60	20
60-70	16
Total	

a. 42.857
b. 43.857
c. 44.857
d. 45.857

$$Mode = l_1 + \frac{(l_2 - l_1)(f_1 - f_0)}{2f_1 - f_0 - f_2}$$

Q.38 A time series data for 9 years for the sale of tables by a furniture mart is given below from year 1993-2001, sequentially.
175,190,185,195,190,200,185,190,205.
(a) Find the linear equation that describes the trend of sales.
(b) Give a forecast for the year 2003

Year	Y	X	xy	x^2
1993	175	-4	-700	16
1994	190	-3	-570	9
1995	185	-2	-370	4
1996	195	-1	-195	1
1997	180	0	0	0
1998	200	1	200	1
1999	185	2	370	4
2000	190	3	570	9
2001	205	4	820	16
Total	1705	0	125	60

Q.39 The data for number of solar homes built in the region during the last 7 months is given (variable x is month) sequentially.
Number of homes: 16, 17, 25, 28, 32, 43, 50
(a) develop a linear equation that best describes the data
(b) Develop a second degree equation for this data that best describes this data.

M	Y	X	xy	x^2	X^4	X^2Y
1	16	-3	-48`	9	81	144
2	17	-2	-34	4	16	68
3	25	-1	-25	1	1	25
4	28	0	0	0	0	0
5	32	1	32	1	1	32
6	43	2	86	4	16	172
7	50	3	150	9	81	450
	211		161	28	196	891

Q.40 A gas company has supplied cooking gas to the city of Mumbai. It has supplied, 18, 20, 21, 25, 26 lakh cubic feet of gas for the years 1996 to 2000, respectively.

(a) Find the linear equation that best describes the data.

(b) Calculate the per cent of trend for this data.

(c) Calculate the Relative cyclical residual for this data.

(d) In which years does the largest fluctuation from trend occur?

year	Y	X	xy	x^2	Y strike	% of trend	Residual
1996	18	-2	-36	4	17.8	101.12	1.12
1997	20	-1	-20	1	19.9	100.50	0.50
1998	21	0	0	0	22	95.45	-4.54
1999	25	1	25	1	24.1	103.73	3.75
2000	26	2	52	4	26.2	99.23	-0.76
Mean = 1998	110	0	21	10			

Q.41 If in a year 20000 boats are rented out then avg should be 5000 boats per quarter. But we know that more boats are rented during summer & less in winter.
Now if the seasonal index for spring is 142 then we can estimate that how many boats will be rented during spring seasons.

a. 7000
b. 7100
c. 6100
d. 6000

Q.42. We have given you the percentages of actual to moving average in the following table from a bank data describing the amount of cash circulation in a small branch.

Year	Spring	Summer	Fall	Winter
1998	87	106	86	125
1999	85	110	83	127
2000	84	105	87	128
2001	88	104	88	124

Calculate the seasonal index for each quarter

Year	Spring	Summer	Fall	Winter
1998	87	106	86	125
1999	85	110	83	127
2000	84	105	87	128
2001	88	104	88	124
Total	172	211	173	252
Moving avg	86	105.5	86.5	126
Tota avg	101	101	101	101
INDEX	85.1	104.5	85.6	128.8

Q.43 From a standard deck of 52 cards, 3 cards are drawn without replacement. What is the probability that exactly one of them is an ace?

a. 0.304
b. 0.204
c. 0.404
d. 0.504

Q.44 Given:

- **n=60**
- **p=0.7**
- **Compute the mean, S.D., coefficient of skewness, Kurtosis, Mode for a binomial distribution**

Q.45 A bank has Gross NPA of ₹10 crore and the provision made against these NPAs is ₹3 crore. What is the PCR?

A) 20%
B) 30%
C) 40%
D) 50%

Q.46 n compliance risk management, on a risk rating scale from 1 to 10, where 1 is lowest risk and 10 is highest risk, which range typically indicates a WELL CONTROLLED risk?

A) 1 to 3
B) 4 to 6
C) 7 to 8
D) 9 to 10


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