



Department of Commerce
Osmania University
Computer Lab – Practical Question Bank
B. Com (Finance), II Year
Semester IV
Business Statistics - II

Time: 60 Minutes

Record : 10
Skill Test : 15
Viva – Voce : 10
Total Marks : 35

Use Microsoft Excel to solve the following:

1. From the following data relating to X and Y, draw a regression line of Y on X

X:	10	16	24	36	48
Y:	20	12	32	40	55

2. From the following data relating to X and Y, obtain the regression line of Y on X and estimate Y when X = 30

X	12	18	22	28	35
Y	15	20	24	30	38

3. From the following data relating to X and Y, calculate the regression equation of Y on X and predict the value of Y when X = 25

X	5	10	15	20	30
Y	8	12	18	21	28

4. You are given data relating to purchases and sales. Obtain the two regression equation by least square method and estimates the likely sales when the purchases are equal to 100.

Purchases:	62	72	98	76	81	56	76	92	88	49
Sales:	112	124	131	117	132	96	120	136	97	85


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5. The following result were declared in Economics and Accountancy in B.Com examinations.

	X	Y
Arithmetic Mean	36	85
Standard Deviation	11	8
Co-efficient of correlation between X & Y = 0.60		

- (i) Find the regression equation X on Y and Y on X
(ii) Estimate the value of X when Y = 60

6. Draw scatter plot and add regression trendline

X:	10	12	15	16	18	20
Y:	12	14	16	10	14	10

7. From the following information construct two regression equations :

Mean of X = 68, Mean of Y = 50, $\sigma_x = 2.5$, $\sigma_y = 20$, $r = 0.60$

8. Given two regression coefficients : $b_{xy} = +0.542$ and $b_{yx} = +0.905$. Calculate coefficient of correlation between x and y.
9. $b_{xy} = 2.8$ and $b_{yx} = -0.3$ then $r = ?$
10. Find slope and interpret relationship

Price	10	12	14	16	18
Demand	120	110	95	85	70

11. Calculate the seasonal index for the following data by using the average method:

Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
2020	72	68	80	70
2021	76	70	82	74
2022	74	66	84	80
2023	76	74	84	78
2024	78	74	86	82

12. From the following data, construct an index for 2025 taking 2024 as base:

Commodities	Price in 2024 (Rs.)	Price in 2025 (Rs.)
A	45	50
B	55	60

16. From the following data, calculate price index by weighted average of price relatives method using Arithmetic Mean:

Commodity	Price in 2020	Quantity in 1995	Price in 2025
A	35	5	48
B	25	10	40
C	40	6	50

17. Construct index number by chain base method for the following data:

Years	2020	2021	2022	2023	2024	2025
Price of wheat per 100 kg	530	600	770	800	840	900

18. From the following data of the wholesale price of wheat for the ten years, construct index numbers taking 2016 as base:

Years	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Price of Wheat (Rs. per kg)	50	60	62	65	70	78	82	84	88	90

19. The annual wages (in Rs.) of workers are given along with consumer price indices. Find:
(i) Real wages (ii) Real wage indices

Years	2022	2023	2024	2025
Wages	1800	2200	3400	3600
Consumer Price Indices	100	170	300	320

20. Construct the consumer price index number for 2025 on the basis of 2024 from the following data using: i) The aggregate expenditure method ii) The family budget method

Commodities	Quantity consumed in 2024	Units	Price in 2024 (Rs.)	Price in 2025 (Rs.)
A	6 quintal	Quintal	11.50	12.00
B	6 quintal	Quintal	10.00	16.00
C	1 kg	Kg	12.00	18.00
D	6 kg	Kg	16.00	20.00
E	4 kg	Kg	4.00	3.00
F	1 kg	Kg	40.00	30.00

21. Construct the cost of living index number from the table given below:

Group	Index for 2025	Expenditure
Food	550	46%
Clothing	220	7%
Lighting	215	10%
House Rent	275	25%
Miscellaneous	150	12%

22. The following figures relate to the profits of a commercial concern for 8 years. Calculate three-yearly moving average.

Years	2017	2018	2019	2020	2021	2022	2023	2024
Profits (Rs.)	15,420	14,470	15,520	21,020	26,120	31,950	35,370	34,670

23. The production of iron during 1977–1983 is given below. Fit a straight line trend to these figures.

Year	2019	2020	2021	2022	2023	2024	2025
Production (in lakhs of tons)	48	50	58	52	45	41	49

24. Fit a straight line trend by the method of least squares to the following data. Assuming that the same rate of change continues, what would be the predicted earnings for the year 1987?

Year	2018	2019	2020	2021	2022	2023	2024	2025
Earnings (in lakh Rs.)	38	40	65	72	79	60	87	95

25. Using five-yearly moving average, determine the trend values from the following data:

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production (‘000 tons)	42	44	46	50	48	44	50	52	54	52

26. Calculate the seasonal index for the following data by using the average method:

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2021	72	68	80	70
2022	76	70	82	74
2023	74	66	84	80
2024	76	74	84	78
2025	78	74	86	82

27. Find the 3-year moving average from the following data :

Year	2016	2017	2018	2019	2020	2021	2022
Sales	120	140	150	165	180	210	240

28. Find the 4-year moving average from the following data:

Year	2014	2015	2016	2017	2018	2019	2020	2021
Production	80	95	100	120	140	160	180	200

29. Calculate the 4-year moving average for the following series:

Year	2013	2014	2015	2016	2017	2018	2019	2020
Profit (₹ '000)	60	72	75	90	110	125	140	160

30. Find the 5-year moving average from the following data:

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales	150	165	170	180	200	215	230	250	270

31. Compute the 5-year moving average for the following data:

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025
Output	90	100	110	125	140	155	160	175	190

32. A card is drawn from a standard deck of 52 cards.

- Probability of King
- Probability of Red card
- Probability of Red King
- Probability of Non-face card

33. Mutually Exclusive Events

$P(A)=0.35$, $P(B)=0.25$, A and B mutually exclusive. Find $P(A \cup B)$ and $P(\text{neither A nor B})$

34. Conditional Probability Table

Event	Occurrence
Students passed	60
Students failed	40
Passed & studied	45

Find $P(\text{Studied} | \text{Passed})$

35. $P(A)=0.4$, $P(B)=0.7$; Verify independence using Excel formulas

36. Husband and wife attend two different interviews.

Probability husband selected = 0.6; Probability wife selected = 0.5 (Assume independent events)

Find:

- (a) Probability both selected
- (b) Probability exactly one selected
- (c) Probability at least one selected
- (d) Probability none selected

37. Two candidates A and B appear for a job interview.

Probability that A is selected = 0.5

Probability that B is selected = 0.4

Probability that both are selected = 0.2

Find:

- (a) Probability at least one is selected
- (b) Probability only A is selected
- (c) Probability only B is selected
- (d) Probability none is selected

38. The probability that a husband is selected in an interview is 0.7 and the probability that his wife is selected is 0.6. The probability that both are selected is 0.5.

Find:

- (a) Probability that at least one is selected
- (b) Probability that only husband is selected
- (c) Probability that only wife is selected
- (d) Probability that none is selected

39. Find probability person actually has disease given positive test

Condition	Probability
Disease prevalence	4%
Positive if diseased	0.92
Positive if healthy	0.08

40. Find expected profit using Excel

Profit	-200	0	300	500
Probability	0.1	0.2	0.4	0.3

41. A Binomial distribution has $n = 20$, $P = 0.3$. Find the Mean and Variance of the distribution.
42. If 4 coins are tossed 256 times. Find the expected frequencies of 4, 3, 2, 1 and 0 Heads when $p = 1/4$ and $q = 3/4$.
43. If 5% of the items produced by a factory are defective, use Poisson distribution to find the probability that in a sample of 100 items. (Given $e^{-5} = 0.007$)
 (i) none is defective (ii) 5 items will be defective.
44. A manufacturer who produces medicine bottles find that 0.1% of the bottles are defective. The bottles are packed in boxes containing 500 bottles. A drug manufacturer buys 100 boxes from the producer of bottles. Using Poisson distribution, find how many boxes will contain :
 (a) no defective (b) at least two defectives (given $e^{-0.5} = 0.6065$)
45. Five coins are tossed 3,200 times, find the frequencies of the distribution of heads and tails, and tabulate the results and also calculate mean and standard deviations of fitted distribution.
46. Two percent of a lot of manufactured items are defective. Find the probability that in a sample of 100 items exactly 2 will be defective.

47. Five hundred TV sets are inspected and the number of defects per unit is recorded follows:

No. of defects(x):	0	1	2	3	4
No. of Sets(f)	368	72	52	7	1

48. Students of a class were given an aptitude test. Their marks were found to be normally distributed with mean 60 and standard deviation 5. What percentage of students scored.
 i) More than 60 marks ii) Less than 56 marks iii) Between 45 and 65 marks
49. The probability of the evening college student will be a graduate is 0.4. Determine the probability that out of 5 students (i) none (ii) one (iii) atleast one will be a graduate.
50. A manufacturer of television sets known that of an average 5% of this product is defective. He sells television sets in consignment of 100 and guarantees that not more than 4 sets will be defective. What is the probability that a television set will fail to meet the guaranteed quality?

[$e^{-5} = 0.0067$]