D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

DEPT OF COMMERCE WITH COMPUTER APPLICATIONS

15CACC3A -BUSINESS STATISTICS – SEM III

UNIT-I   INTRODUCTION :

Statistics – Definition -scope and limitations – Collection of data – secondary & primary data – questionnaire – classification and tabulation – Types of sampling – methods – Simple, Random, systematic, Stratified and duster -sampling error.

UNIT – II   MEASURES OF CENTRAL TENDENCY AND DISPERSION.

Mean, Median and Mode -Dispersion – Range – Quartile, Mean, standard deviations. Measures of skewness.

UNIT – III   CORRELATION

Karl Pearson's co-efficient of correlation – spearman's Rank correlation -regression lines and co-efficient of correlation.

UNIT -IV   TIME SERIES ANALYSIS

Trend -seasonal variations – Interpolation – Newtons and Lagrange's method of estimation.

UNIT –V   INDEXNUMBERS

Aggregate and relater   index- chain and fixed index – whole sale and cost of luring index.

UNIT- I   INTRODUCTION   SEC-A   2 MARKS

1. Define statistics.
2. Give any two functions of statistics.
3. Write any two limitations of statistics.
4. Write any two applications of statistics.
5. Define a population
6. What is sampling?
7. Explain population?
8. What is finite population?
9. What is infinite population?
10. Name the types of sampling?
11. Name the types of sampling?
12. Give the methods of selection of samples.
13. What are the types of stratified random sampling.
14. How will you classify data?
15. What are the types of classification?
16. What do you understand by measures of central tendency?
17. Define mean
18. Define median
19. Define mode.
20. Give the characters of dispersion.
21. What is Range?
22. Give the meaning of skewness.
23. Calculate mean. 2,4,6,8,10.
24. What is correlation?
25. Define regression?
26. What is rank correlation?
27. What is meant by Time series?
28. What are the four categories of time series?
29. What is meant by index number?
30. Give the classification of index numbers?

31. What is meant by index number?

32. Give the classification of index numbers?

SEC - B   5 MARKS

1. What is sampling? Give the principles of sampling and explain sampling errors.

2. Define sampling. Give its advantages and disadvantages.

3. Explain the types of sampling in detail.

4. What is stratified Random sampling?

5. What is systematic sampling? Give its merits and demerits?

6. What is a primary data? Give its merits and demerits.

7. What is secondary data? Give its merits and demerits.

8. What is classification? And objects of classification.

9. Calculate arithmetic Mean.

Marks	64	63	62	61	60	59
No.of.stu:	8	18	12	9	7	6

10. Calculate arithmetic mean

Income(100):	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of.persons	6	8	10	12	7	4	3

11. Calculate range and co-efficient from the following.

SiZe:60-63	63-66	66-69	69-72	72-75
No:5	18	42	27	8

12. Calculate median. 25,18,27,10,8,30,42,20,53.

13. Calculate median. 5,8, 12, 30,18,10,2,22.

14. From the following calculate median.

No.of. members: 1	2	3	4	5	6	7	8	9	10	11	12
Frequency:1	3	5	6	10	13	9	5	3	2	2	1

15. Find the Quartile Deviation for the following.

391,384,591,407,672,522,777,733,1490,2488.

16. Calculate R. D and co efficient of RD

Wage:100	200	400	500	600
No. Of Weeks: 5	8	21	12	6

17. Calculate RD and co-efficient of RD

X:351-500	501-650	651-800	801-950	951-1100
F:48	189	88	4	28

18. Calculate mean deviation from mean and median for the following data. Also calculate co-efficient of M.D 100,150,200,250,360,490,500,600,671.

19. Compute Men deviation from mean and median from the following data.

Height in cms:158	159	160	161	162	163	164	165	166
No. Of Persons:15	20	32	35	33	22	20	10	8

20. Find out the mean deviation from mean and median from the following and also co-efficient.

Agencies:0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of. persons :20	25	32	40	42	35	10	8

21. Calculate the standard deviation from the following data.14,22,9,15,20,17,12,11

22. Calculate standard deviation

No. Of. Students:1	2	3	4	5	6	7	8	9	10
Marks:43	48	65	57	31	60	37	48	78	59

23. Calculate SD from the following.

CI	5-15	15-25	25-35	35-45	45-55
Treg	8	12	15	9	6

24. Calculate median from the following

Value:0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39
F:5	8	10	12	7	6	3	2

25. Compute median for the following.

Mid. Value	5	15	25	35	45	55	65	75
Frequency	7	10	15	17	8	4	6	7

26. Calculate mode for the following.

CI	0-50	50-100	100-150	`150-200	200-250	250-300	300-350
f	5	14	40	91	150	87	60
	350-400		400Jabove				
	38		15				

27. Calculate Karl-Pearson's co-efficient of skewness for the following data.

    i. 25,15,23,40,27,25,23,25,20

    ii.

Size:3	4	5	6	7	8	9	10
F:7	10	14	35	102	136	43	8

iii

X:0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
F:2	5	7	13	21	16	8	3

28. Calculate Bowley's co-efficient of skewness.

i. 2,4,6,8,10,12,14,16,18,20,22.

ii.

Size:4	4.5	5	5.5	6	6.5	7	7.5	8
F:10	18	22	25	40	15	10	8	7

iii.

iii.Wage:10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Persons:1	3	11	21	43	32	9

29. Find Karl Pearson's coefficient of correlation from the following data.

X	64	65	66	67	68	69	70
Y	66	67	65	68	70	68	72

30. From the following data, calculate the co-efficient of rank correlation.

X	88	95	70	60	50	80	75	85
Y	84	90	88	55	48	85	82	72

31. Give the difference between correlation & Regression.

32. Given 8x-10y+66=0+ 40x-18y=214. Find the correlation coefficient. R.

Yr:58	59	60	61	62	63	64	65	66

Sales:65	95	80	115	105	135	125	150	140

33. Calculate 3- moving average method.

34. Fill a straight-line trend by the method of least squares from the following data & find the trend values.

YR:	58	59	60	61	62
Sales:	65	95	80	115	105

35. Calculate the seasonal index.

Month	67	68	69	70
Jan	10	11	10	12
Feb	12	11	12	13
Mar	13	12	11	13
Apr	15	13	12	15
May	16	14	13	16
June	16	14	15	18
July	17	15	15	20
Aug	18	15	17	20
Sep	18	15	18	21
Oct	19	16	20	22
Nov	22	18	22	24
Dec	22	10	24	25

36. Computer the seasonal index.

Quarter	1930	1931	1932	1933
I	32	42	49	47
II	39	44	53	51
III	45	57	65	62
IV	36	45	55	50

37. Calculate the seasonal index by the ratio-to-moving average.

Year	I Qua	II Qua	III Qua	IV Qua
1960	30	40	36	34
1961	34	52	50	44
1962	40	58	54	48
1963	54	76	68	62
1964	80	92	86	82

38. DE seasonalize the following data using a multiplicators model.

Quarter	1	2	3	4
Sales seasonal index	15.4	25.2	23.7	21.4
	148	124	78	57

39. Taking 1965 as the base year calculate the price index numbers for the years 1966,67, &68 from the following data.

YR	65	66	67	68
price	25	27	30	35

40. Calculate the simple aggregate price index for the following group of commodities taking 1965 as the base year.

Commodity/unit	Price in 1965(2)	Price in 1970()
Butter /kg	10	12
Milk /lit	1.20	1.50
Ghee/Ten	19	19.80
Bread/kg	1.40	1.80
Eggs /Dozen	3	3.50

41. From the chain base indices given below find out the fixed base indices.

YR	00	01	02	03
CBI	80	110	120	90

42. From the fixed base index given below find out the chain base index.

YR	40	41	42	43
FBI	267	275	280	290

43. Calculate the cost of living index number based on weighted arithmetic mean.

Group	Index number for 1960	`weight
Food	152	48
Fud &lighting	110	5
Clothing	130	10
Rent	100	12
Miscellaneous	80	15

SEC -C   10 MARKS

1. Write a detailed note on the types of classification.

2. What is meant by statistics? Define it and give the scope and merits and limitations of statistics.

3. Obtain the equations of the two lines of regression for the data given below.

X	45	42	44	43	41	45	43	40
Y	40	38	36	35	38	39	37	41

4. Interpolate the value of the function corresponding to x=4 using Lagrange's interpolation formula.

X	10	20	30	40	50
Y=f (X)	46	66	81	93	101

5. Using Newton's backward difference formula estimate the sales for the year 1979.

YR sales (in lakhs)	74	76	78	80	82
	40	43	48	52	57

6. Calculate different weighted index numbers of quantities for 1957 from the following data.

Commodity	Price	Quantity	Price	Quantity
A	4	3	5	2
B	5	4	6	4
C	7	2	9	2
D	2	3	1	5