

S.Y.B.COM SEMESTER END EXAMINATION

OCT-NOV

2018-19 (REGULAR / REPEAT)

Sub: BUSSINESS STATISTICS – I (AS PER CBCS)

Semester: III

M. Marks: 80

M. Time: 2 hrs.

INSTRUCTIONS: 1. All the questions are compulsory however internal choice is available.

2. Use of calculator is allowed.

3. Figures to the right indicate marks allotted.

4. There are 5 main questions each carrying 16 marks.

5. You may answer randomly but every main question attempted should be answered serially.

- Q. 1 a) Define the terms population, sample and data with respect to statistics. (3)
 b) Prepare the cumulative frequency table of less than type for the following distributions of the marks of 90 children. Also answer the following questions. (6)

Marks obtained	No. of children
0 – 10	2
10 – 20	22
20 – 30	35
30 – 40	25
40 - 50	6

- i) State the number of children getting marks less than 40.
 ii) State the number of children getting marks greater than or equal to 20.

- c) Represent the following data by a sub-divided bar diagram. (7)

College	Number of students			
	Arts	Commerce	Science	Total
ABC	150	100	400	650
XYZ	130	240	530	900

OR

- C. I. x) Describe functions of statistics. (3)
 y) The following data refers to the weight of 26 students in a class. Prepare a univariate frequency distribution table taking class interval as 45 – 50, 50 – 55, 55 – 60, etc. (6)
- 48 55 59 62 68 66 54 69 49 53 57 59 54
 47 49 63 66 61 60 50 49 53 55 58 65 61
- z) Draw a frequency polygon for the given data. (7)

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
No. of students	3	8	12	18	9

- Q. 2 a) Name the different types of diagrams. (3)
 b) a well-known cigarette company took survey of their own employees with respect to smoking. The results of the survey are tabulated below. Find the mode of the data. (6)

Age group of employees	20 – 30	30 – 40	40 – 50	50 – 60
No. of smokers	24	38	23	15

- c) Out of 150 students in a class, 50 are boys. If average of boys attending lectures is 60% and the total average attendance of the entire class is 80%, find the average percentage of attendance of girls. (7)

OR

- Q. II x) State the different typed of graphs. (3)
 y) For the following data given below, find its median. (6)

Class interval	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Frequency	16	24	35	25	23

- z) The mean value of the marks obtained by 55 students is 17.5. It was later discovered that one student was wrongly given 7 marks instead of 17. Find the correct mean. (7)

- Q. 3 a) State any three advantages of arithmetic mean. (3)
 b) Calculate P_{64} for the following data. (6)

Class Interval	0 – 2	2 – 4	4 – 6	6 – 8	8 – 10
Frequency	10	20	30	15	15

- c) find the mean and the standard deviation for the following data.. (7)

Height (in cms.)	90	95	100	105	110	115
No. of students	10	21	32	17	14	8

OR

- Q. III x) Write the merits of mode. (3)
 y) Calculate the mean deviation from median for the following data. (6)

Wages (in ₹)	250	300	350	400	450
No. of employees	15	32	33	25	12

- z) Find Bowley's coefficient of Skewness for the following data (7)

Class Interval	0 – 6	6 – 12	12 – 18	18 – 24	24 – 30
Frequency	2	3	4	4	2

- Q. 4 a) Explain the concept of index numbers. (3)
 b) For the following data construct chain base index numbers. (6)

Year	2012	2013	2014	2015	2016	2017
Price (in thousands)	23	25	29	31	35	33

c) Calculate Laspeyre's price index number for the following data. (7)

Commodity	Base Year		Current Year	
	Quantity	Price	Quantity	Price
A	50	6	56	10
B	100	2	120	2
C	60	4	60	6
D	30	10	24	12

OR

Q. IV x) State any three uses of Index numbers. (3)

y) Reconstruct the index numbers by shifting the base year to 2014 (6)

Year	2010	2011	2014	2015	2016	2017
Index Number	106	110	108	114	119	120

z) Calculate Lespeyre's and Paasche's price index number from the following data. (7)

commodity	Base		Current	
	Price	Quantity	Price	Quantity
P	1	15	3	20
Q	5	25	8	30
R	8	40	15	40
S	12	100	12	150

Q. 5 a) State different methods of estimating trend. (3)

b) Compute trend line by using least square method for the following data. (6)

Year	2012	2013	2014	2015	2016
Production (in 000' tons)	12	14	13	15	16

c) Calculate 3 yearly moving averages of a number of students studying in a college. (7)

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
No. of students	320	354	415	440	450	430	520	500	550

OR

Q. V x) Write different components of time series. (3)

y) Compute four yearly moving averages trend of bank clearances. (6)

Year	2010	2011	2012	2013	2014	2015	2016	2017
Bank Clearances (in crores)	12	15	13	16	20	18	21	23

z) Draw a trend line by the method of semi averages and hence estimate trend value for year 2018. (7)

Year	2011	2012	2013	2014	2015	2016
Sales (in ₹ lakhs)	12	15	17	24	20	14