BCOM III SEMESTER END EXAMINATION, OCTOBER 2018

GENERIC ELECTIVE 3: BUSINESS STATISTICS-I

Duration: 02 Hours   **Total Marks: 80**

Instructions : (i) Attempt All Questions.
(ii) Figure to the right indicate full marks.
(iii)Use of simple (Non Scientific) calculator is allowed.
(iv) Graph papers will be supplied on request.

Q. 1) Answer the following: **(16)**

a) i) Write any 2 examples of Attribute.   **(3)**
   ii) Define Parameter.

b) Construct Frequency Polygon for the following data: **(6)**

Class Interval	20-26	26-32	32-38	38-44
Frequency	60	10	44	110

c) Calculate Mean Deviation from Mean for the following data: **(7)**

x	22	30	40	50
Frequency (f)	27	14	31	15

OR

Q.1) Answer the following: **(16)**

x) Write any 1 point of difference between Sample and Population.   **(3)**

y) Draw less than Ogive for the following data: **(6)**

Class Interval	50-70	70-90	90-110	110-130
Frequency	44	17	13	30

z) Calculate Median and Harmonic Mean for the following data: **(7)**

x	50	60	90	100
Frequency (f)	16	23	35	57

Q.2) Answer the following: **(16)**

a) i) Define Primary Data.   **(3)**

   ii) Describe Direct Personal Investigation used in collecting Primary Data.

b) Calculate Karl Pearson's Coefficient of Skewness for the following data: **(6)**

Class Interval	4-10	10-16	16-22
Frequency	15	20	16

c) Convert the following Chain Base Index Numbers to Fixed Base Index Numbers with base year 2013: **(7)**

Year	2013	2014	2015	2016	2017
Chain Base Index Numbers	100	109	130	161	181

OR

Q.2) Answer the following: **(16)**

x) i) Write any 3 sources of Secondary data. **(3)**
 ii) Define Discrete Variable.

y) Calculate Mean and Mode for the following data: **(6)**

Class Interval	30-34	34-38	38-42	42-46
Frequency	12	13	18	16

z) i) Calculate Real Income for the following data: **(7)**

Year	2011	2012	2013
Income	22800	26500	31000
Index Number	100	134	155

ii) Calculate Simple Average of Price Relatives for the following data taking 2016 as base year:

Commodity	Price in	
	2016	2017
A	70	84
B	48	57

Q.3) Answer the following: **(16)**

a) i) Write any 2 objectives of classification. **(3)**
 ii) Define Exclusive Class Interval.

b) Fit a second degree trend curve for the following data: **(6)**

Year	2007	2008	2009	2010	2011
Sales	20	22	19	25	24

c) The mean marks of 18 students as calculated from frequency distribution is found to be 60. It is later discovered that the frequency of the class interval 40-50 was wrongly taken as 12 instead of 21. Calculate the correct value of Arithmetic Mean. **(7)**

OR

Q.3) Answer the following: **(16)**

x) The following data refer to the marks of 13 students in a certain test: **(3)**

$17, 57, 26, 33, 18, 51, 45, 18, 23, 12, 14, 50, 58$

Taking class intervals as $12 - 22, 22 - 32, 32 - 42, 42 - 52, 52 - 62$ prepare a frequency distribution table.

y) Fit a trend line by method of Least Squares for the following data and estimate import in the year 2015: **(6)**

Year	2010	2011	2012	2013	2014
Import	35	42	43	51	57

z) For the data given below: **(7)**
   i) calculate D_7
   ii) calculate P_{47}

Class Interval	80-90	90-100	100-110	110-120
Frequency	55	169	197	279

Q.4) Answer the following: **(16)**

a) 1) Write any 1 limitation of Statistics. **(1)**

   2) Define Splicing. **(1)**

   3) Write any 1 example of Irregular Component of time series. **(1)**

b) Calculate Median for the following data: **(6)**

Class Interval	70-78	78-86	86-94	94-102	102-110
Frequency	60	33	99	10	10

c) Fit a trend line by the method of Semi Averages for the following data: **(7)**

Year	2011	2012	2013	2014	2015	2016
Sales	91	93	98	99	106	104

OR

Q. 4) Answer the following: **(16)**

x) 1) Define Questionnaire. **(1)**

   2) State Weighted Aggregative Price Index Number formula. **(1)**

   3) Write all the 4 components of time series. **(1)**

y) i) If Bowley's Coefficient of Skewness $= 0.92$, $Q_3 = 80$ and $Q_1 = 20$, then find the value of Q_2. **(6)**

   ii) If mean=103 and standard deviation=100, then find the value of Coefficient of Variation.

z) Calculate 3 Yearly Moving Averages for the following data and represent the trend values on the graph: **(7)**

Year	2009	2010	2011	2012	2013
Export	96	83	87	90	85

Q.5) Answer the following: (16)

a) Draw a Multiple Bar Diagram representing the following data: (3)

Year	Number of students enrolled in Higher Secondary	
	A	B
2009	100	60
2015	80	110

b) Calculate Standard Deviation for the following data: (6)

x
17
18
25
37
38
39

c) Calculate Laspeyre's Price Index Number for the following data taking 2011 as base year: (7)

Commodity	2011		2012	
	Price	Quantity	Price	Quantity
A	44	14	45	13
B	25	20	34	21
C	60	15	68	19

OR

Q.5) Answer the following: (16)

x) Draw a Simple Bar Diagram representing the following data: (3)

Month	February	May	July
Number of cold drinks sold (in hundreds)	19	28	15

y) Calculate Coefficient of Quartile Deviation for the following data: (6)

Class Interval	20-24	24-28	28-32
Frequency	50	120	110

z) Reconstruct the index numbers by shifting the base to 2003 for the following data: (7)

Year	2001	2002	2003	2004	2005
Index number with base 2001	100	151	166	171	180

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4