Registration No :

Total Number of Pages : 02

1st Semester Regular/Back Examination 2019-20
BUSINESS STATISTICS
BRANCH : IMBA
Max Marks : 100
Time : 3 Hours
Q.CODE : HBR714
Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part-I

Q1 **Only Short Answer Type Questions (Answer All-10)** (2 x 10)

a) Given that mean=50,C.V=40%,Skewness (Karl'spearson)=-0.4.Find out S.D, mode and median.

b) Find S.D Of 3,6,9,12,15,18,21,24,27 and 30.

c) The Harmonic mean of 10 and 15 observations are 10.2 and 12.5.Find combined H.M

d) If C.V(x)=40% and C.V(y)=60%. S.D(x)=16,S.D(y)=15.Find Mean of X and Mean of Y.

e) If Q.D is 40.,find M.D and S.D

f) The mean of 50 observations is 35.Later on it was found that one observation 45 is misread as 54.Find out corrected mean.

g) Explain advantages of A.M

h) Find the Quartile Deviation for the following data :
391, 384, 591, 407, 672, 522, 777, 733, 1490, 2488

i) What is nominal and ordinal data?

j) The probability that a boy will get a scholarship is 0.65. and that a girl will get it is 0.70. What is the probability thatatleast one of them will get the scholarship.

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** (6 x 8)

a) The sum of deviation of a set of values $x_1,x_2,x_3.....x_n$ measured from 50 is -10. And the sum of deviation of values from 46 is 70.Find the value of n and the mean.

b) You note that your officer is happy on 60% of your calls, so you assign a probability of his being happy on your visit as 0.6.You have noticed also that if he is happy ,he accedes to your request with a probability of 0.4 where as if he is not happy ,he accedes to the request with probability of 0.1. You call one day ,and he accedes to your request. What is the probability of his being happy?

c) If A.M and G.M of two numbers are 10 and 8 respectively. Find the numbers.

d) The mean of 5 observations is 6. And variance is 8. If three numbers are 2,4,8.Find the other two.

e) Differentiate between primary and Secondary data.

f) What is tabulation? Explain essential characteristics of tabulation.

g) What do you mean by classification? Explain its objectives and types.

h) Calculate β1 and β2 for the following data :

X :	0	1	2	3	4	5	6	7	8
F :	5	10	15	20	25	20	15	10	5

i) What do you mean by Skewness ? What are the various measures ofskewness.

j) What do you mean by kurtosis ?What is the measure of measuring kutosis.?

k) A bag contains 25 balls numbered from 1 t0 25.One ball is drawn at random. Find the probability that the number of the drawn ball will be a multiple of (I)   3 or 5 (II)2 or 6.

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I) Calculate Bowley's coefficient of skewness from the following data :

Mid value:	75	100	125	150	175	200	225	250
Frequency:	35	40	48	100	125	80	50	20

Part-III
Only Long Answer Type Questions (Answer Any Two out of Four)

Q3   Define Statistics . Discuss in detail the importance of statistics with special reference   **(16)**
to business and industry?

Q4   Find mean,median and mode of the following data :   **(16)**

Mid Value:	10	30	50	70	90	110	130	150	170	190
Frequency:	12	15	18	22	24	37	40	43	18	12

Q5   You are given below the daily wages paid to workers in two factories.   **(16)**

Daily wages(Rs):	No of workers in factory	
	A	B
200-300	15	25
300-400	30	40
400-500	44	60
500-600	60	35
600-700	30	20
700-800	14	15
800-900	7	5

Using mean and standard deviation ,answer the following question:
(I)   Which factory pays higher average wages?
(II)   In which factory are wages more variable?
(III)   Which factory has to pay more wages in a month assuming the both work for
        20 days in a month.

Q6   **a)**   What is Bays Rule and explain its uses.   **(16)**
       b)   What are the Procedures involved in collection of Primary data

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IMBA
16IMN103

1st Semester Regular / Back Examination 2018-19
BUSINESS STATISTICS
BRANCH : IMBA
Time : 3 Hours
Max Marks : 100
Q.CODE : E753
Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1   Short Answer Type Questions (Answer All-10)   (2 x 10)
a)   If $y=2+3x$ and mode of x is 15, find mode of y.
b)   The AM and GM for two observations are 5 and 4 respectively. Find the two observations.
c)   If there are two groups with 75 and 65 as harmonic means and containing 15 and 13 observations, then find combined HM.
d)   The sum of 10 observations is 110 and the sum of squares of observations is 2900, then find S.D.
e)   If mean and coefficient of variation of x are 10 and 40%, then find S.D.
f)   Two variables x & y are related by $y=4x-7$. If S.D of x is 2, find S.D of y.
g)   3 coins are tossed at once. What is Prob. of getting at least 2 heads?
h)   Two dice are tossed at once. What is Prob. of getting the sum 10?
i)   One card is drawn from a pack of 52 cards. What is Prob. that the card drawn is either a heart or a diamond?
j)   If $Q_1=25$, $Q_3=75$ and coefficient of skewness = 0.4, find Q_2

Part- II

Q2   Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)   (6 x 8)
a)   Prove that $A.M \geq G.M \geq H.M$.
b)   Find AM of the following distribution.

Marks	More than 0 and above	More than 5 and above	More than 10 and above	More than 15 and above	More than 20 and above
C.F	10	8	5	1	0

c)   Find missing figure from the following distribution, where median = 32.5

Marks	10-20	20-30	30-40	40-50	50-60
No. of Students	3	5	-	3	1

d)   Find coefficient of mean deviation about median for the following distribution

Weight (Kg)	40-50	50-60	60-70	70-80
No. of Persons	8	12	20	10

2 $\mathscr{X}$

e) If the number of observations is 10 and $\Sigma x_i = 110$, $\Sigma(x_i-5)^2 = 1000$, then find S.D.

f) The Karl Pearson's coefficient of skewness of a distribution is 0.32. If S.D is 6.5 and mean is 29.6, then find mode and median.

g) A card is drawn at random from a pack of 52 cards. What is Prob. that it is a heart or a queen?

h) A speaks truth is 75% and B speaks truth is 80%, In what percentage of cases are they likely to contradict each other narrating the same incident?

i) A, B & C are three mutually exclusive and exhaustive events. Find P (B) if $\frac{1}{2}$P (A) = $\frac{1}{3}$ P(C) = P (B).

j) A card is drawn from a pack of 52 cards and then a second card is drawn. What is prob. that both the cards drawn are queen?

k) Two dice are tossed at once. What is prob. that the sum is neither 8 nor 10?

l) Explain the following items of tabulation: Stub, Caption, Body, Foot note.

Part-III
Long Answer Type Questions (Answer Any Two out of Four)

Q3 The mean and variance of 5 observations are 4.8 & 6.16 respectively. If three of the observations are 2, 3 &6, what are the remaining observations? **(16)**

Q4 Find Bowley measure of skewness from the following distribution. **(16)**

Age (Yr)	Below 20	20-25	25-30	30-35	35-40	40-45	45-50	50 and above
No. of Workers	13	29	46	60	112	94	45	21

Q5 In a pen factory, machines M_1, M_2 and M_3 manufacture respectively 25,35& 40 percent of the total output. Of their output 5,4&2 percent respectively are defective pens. One pen is drawn at random from the product and is found to be defective. What is prob. that it is produced in M_2 machine? **(16)**

Q6 Explain various methods for the collection of primary data and various sources of collection of secondary data. **(16)**

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1st Semester Regular/Back Examination 2017-18
BUSINESS STATISTICS
BRANCH : IMBA
Time: 3 Hours
Max Marks: 100
Q.CODE: B906
Answer Question No.1 and 2 which are compulsory and any four from the rest.
The figures in the right hand margin indicate marks.

Q1 Fill in the blanks : (2×10)

a) In the olden days statistics was confined to only---------------.
b) Classification and ---------- are the two methods that are used to condensed the data.
c) The heading of the rows given in the first column of a table are called------
d) The data recorded according to standard of education like primary, secondary,graduate etc will be known as ------------- classification.
e) ------------- curve is graphical method of studying dispersion.
f) Ogives for more than type and less than type distribution intersect at -----------
g) Geometric mean can not be calculated if any value of the set is -------.
h) Median is a more suited average for grouped data with ------------- classes.
i) If $\beta_2 < 3$.the distribution is called--------------------.
j) If mean = 50, mode = 48, S.D = 20, The coefficient of skewness will be ---------.

Q2 Answer the following questions : (2×10)

a) Explain various types of statistical units.
b) What are the merits of ideal classification?
c) What are the various methods of classification ?
d) What do you mean by footnotes ?
e) What are the basic objectives of tabulation ?
f) Explain merits of arithmetic mean.
g) What is the effect on mean if we increase, decrease all the terms of a series.
h) What is the effect on standard deviation if we increase, multiply all the terms of a series.
i) Establish the relationship among AM,GM and HM
j) What are the various relative measures of skewness.

Q3 Find mean and mode of the following information : (15)

X	0-20	20-40	40-60	60-80	80-100	100-120	120-140	140-160
f	14	26	33	36	39	18	6	2

Q4 a) Calculate harmonic mean from the following information : (7.5)

Mark	0-10	10-20	20-30	30-40	40-50
No of students	2	7	13	5	3

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b) If the price of a commodity doubles in a period of 4 years ,what is the average percentages increased per year.   (7.5)

Q5 a) Fill in the blanks: (7.5)

	Series I	Series II	Combined
No.of Observation	100	-	250
Mean	15	-	50
Standard Deviation	3	-	5

b) The arithmetic mean and standard deviation of a series of 20 observations were 20 and 5 respectively. Later on it was found that 13 was misread as 30. Find corrected mean and standard deviation.   (7.5)

Q6 a) Define Statistics.How statistics is used in Manageemnt?   (7.5)
b) What are methods involved in collection of primary data.   (7.5)

Q7 a) (i) A and B throw alternatively with a pair of dice. A wins if he throws 6 before B throws7,and B if he throws 7 before A throws 6.If A begins, show that his chance of his wining =30/61.   (4+4)
(II) A Subcommittee of 6 members is to be formed out of a group of 7 men and 4 ladies. Calculate the probability that the subcommittee will consist of at least two ladies.

b) A doctor has decided to prescribe two new drugs to 200 heart patients, as follows : 50 get drug A,50 get drug B and 100 get both. Drug A reduces the probability of a heart attack by 35%,drug B reduced the probability by 20% and the two drugs, when taken together ,work independently .The 200 patients were chosen so that each has an 80% chance of having a heart attack. If a randomly selected patient has a heart attack , what is the probability that the patient was given both drugs.   (7)

Q8 a) Calculate coefficient of skewness from the following information.   (7.5)

Age in Years	10-20	20-30	30-40	40-50	50-60
No of Persons	18	20	30	22	10

b) From the following information Find out kurtosis: (7.5)

Income(Rs.)(000)	0-10	10-20	20-30	30-40
Frequency	1	3	4	2

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1st Semester Regular Examination-2016-17

BUSINESS STATISTICS

Branch : Integrated MBA

Time: 3 Hours

Max marks: 100

Q.CODE : Y766

Answer Question No.1 & 2 which is compulsory and any four from the rest.

The figures in the right hand margin indicate marks.

Q1	Fill in the blanks.	(2 x 10)

a) The data collected from book is _____ type of data?
b) _____ is a visual display of data in the form of continuous curves or discontinuous lines.
c) If three coin tossed simultaneously _____ is the probability getting 2heads.
d) If X and Y are independent event then $P(X \cap Y)=$ _____
e) Two consecutive class marks of a distribution are 36 and 41.Then the class size is _____
f) The relation between Mean, Median and Mode is _____.
g) The probability of sure event is _____?
h) If co-efficient of kurtosis is 2 then it is known as _____ kurtic
i) _____ is the median of first ten prime numbers.
j) _____ is the mode of the following set of numbers?{12,3,15,4,7,6,3,3,15}

Q2	Answer the following questions:	(2 x 10)

a) What is skewness?
b) What do you mean by measure of central tendency?
c) Explain the meaning of sampling?
d) Define sample space ,event and probability
e) What is Dispersion?
f) The marks obtained by 20 student of class in an examination are given below. 18,8,12,6,8,16,12,5,23,2,16,23,2,10,20,12,9,7,6,5. Represent the data in the form of a frequency distribution table of the same class size.
g) What is the use of Dispersion?
h) What do you mean by co-efficient of variation?
i) Describe kurtosis?
j) State Bayes' Theorem?

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Q3 a) Find the missing frequencies f1 and f2 of the following series. If the arithmetic mean is 39.5 and the total number of items is 100:

Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
F:	5	10	f1	4	20	3	f2

b) If it rains ,a dealer in umbrella can earn Rs.300 per day .If it does not ,he would lose Rs.80 per day. What is his expectation .if the probability of a rainy day is 57/100? **(7)**

Q4 a) Calculate the geometric mean from the following distribution: **(8)**

Marks:	0-9	10-19	20-29	30-39	40-49	50-59
No.of students	8	32	22	58	124	84

b) Three coins are tossed simultaneously .Find the probability that they will fall with two heads, and one tail. **(7)**

Q5 From the data given below calculate the harmonic mean of the outputs per worker: **(15)**

Output:	10-14	15-19	20-24	25-29	30-34	35-39	40-44
No of workers:	2	6	7	12	15	5	3

Q6 a) The Mean, Median and Mode of a set of 75 items were ascertained to be 27,29 and 34 respectively .Afterwards, it was noticed that an item was taken as 44 instead of 53 .Determine the correct value of the Mean ,Median and mode. **(8)**

b) The Arithmetic Mean and Geometric Mean of two items are 12.5 and 10 respectively .Ascertain the values of the two items **(7)**

Q7 The Means of the runs scored by the three batsman A,B and C in the same series of 10 innings are 50 ,40 and 20 respectively. The Standard Deviation of their runs are respectively 15, 10 and 5 .Who is the most consistent of the three? If one of the three is to be selected .who is he? **(15)**

Q8 a) The following is the distribution of marks of Arun class VI in all is subject. Draw a histogram for the above data. **(8)**

Subject	English	Maths	Science	Geography	Economics	History
Marks	40	35	45	41	48	30

b) Find the co-efficient of variation if, Variance is 16, number of items is 20 and sum of items is 160. **(7)**

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