

**3/H-76 (vii) (Syllabus-2019)**

**2022**

( November )

**COMMERCE**

( Honours )

( BC-301 )

**( Business Statistics )**

( Under Revised Syllabus )

*Marks : 75*

*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

1. (a) Define statistics. Point out its importance in the field of business and commerce. 3+7=10
- (b) Distinguish between descriptive statistics and inferential statistics. 5

*Or*

- (a) Distinguish between primary data and secondary data. 5

( 2 )

- (b) Draw a histogram and frequency polygon for the following data : 10

Age in Years	No. of Persons
10-20	3
20-30	16
30-40	22
40-50	35
50-60	24
60-70	15
70-80	2

2. (a) What are the characteristics of a good measure of central tendency? 5
- (b) Find the missing frequency, if arithmetic mean is 28 of the data given below. Also find the median of the series later :  $6+4=10$

Class	Frequency
0-10	12
10-20	18
20-30	27
30-40	?
40-50	17
50-60	6

Or

- (a) State the properties of a good measure of dispersion. 5

( 3 )

- (b) From the data given below, state which series is more consistent : 10

Variable	Series A	Series B
10-20	20	13
20-30	18	22
30-40	32	40
40-50	40	32
50-60	22	18
60-70	18	10

3. (a) State the properties of Karl Pearson's coefficient of correlation. 5
- (b) Calculate Spearman's coefficient of correlation from the following data : 10
- X : 50 55 65 50 55 60 50 65 70 75
- Y : 110 110 115 125 140 115 130 120 115 160

Or

- (a) Construct Fisher's ideal index and show that it satisfies the time-reversal test and factor-reversal test : 10

Item	2010	2011
	$P_0$	$Q_0$
	$Q_0$	$P_0$
A	10 40	12 45
B	14 50	11 52
C	14 30	17 30
D	8 28	10 29
E	12 15	13 20

- (b) Find the most likely production corresponding to a rainfall 40" from the following data : 5

	Rainfall	Production
Average	30"	500 kg
Standard Deviation	5"	100 kg
Coefficient of correlation = 0.8		

4. (a) Distinguish between permutation and combination by giving suitable example and state the relationship between them. 4+1=5
- (b) If from a pack of cards a single card is randomly drawn, what is the probability that it is either a spade or a king? 5
- (c) In an examination, a candidate is required to answer 6 out of 10 questions which are divided into two groups each containing 5 questions and not permitted to attempt more than 4 questions from each group. In how many ways can he make up his choice? 5

Or

- (a) What do you mean by sampling? Briefly explain the various methods of sampling. 2+8=10
- (b) Distinguish between complete enumeration and sample method. 5

5. (a) State the utility of time series analysis. 5
- (b) Fit a straight-line trend by the method of least squares to the following data :

Year	Production (lakh tonnes)
2015	9
2016	12
2017	14
2018	16
2019	20
2020	26
2021	35

Also estimate the production for the year 2024. 8+2=10

Or

- (a) What are the assumptions on which methods of interpolation are based? 5
- (b) The values of X and Y are given below :

X :	5	6	9	11
Y :	12	10	14	16

Find the value of Y when X = 10 using Lagrange's method. 10

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