B.Com. (Part-II) Examination

BUSINESS MATHEMATICS & STATISTICS

(Commerce)

Time : Three Hours] [Maximum Marks : 70

Note :— (1) Attempt all the **FIVE** questions.

(2) All questions carry equal marks.

1. (A) The HCF of two numbers is 60 and their LCM is 1680. One number is 240. Find the other number. 3

(B) Harish borrowed Rs. 10,000 from Sohan. If the interest rate is 12% per annum, how much Harish will return after six years ? 3

(C) Mr. Gopal is three times as old as his son. After 10 years, the sum of their ages will be 76 years. Find their present ages. 4

(D) In an election between two candidates A and B, A got 65% of the total votes cast and won the election by 2748 votes. Find the total number of votes cast if no vote is declared invalid. 4

OR

(E) Find the compound interest on Rs. 3,20,000 for one year at the rate of 20% per annum, if interest is compound quarterly. 3

(F) The students in a class can be divided into groups of 2, 3, 5 and 6. What is the least number of children this class can have ? 3

(G) The income of A and B is in the ratio 4 : 3 and their expenditures is in the ratio 3 : 2. If they both save Rs. 600 at the end of a year, find the annual income of each. 4

(H) A cycle is sold for Rs. 150 at profit of 25% on cost. At what price should it be sold in order to have 50% profit on cost ? 4

2. (A) Explain the importance of Statistics. 3

(B) Distinguish between primary and secondary data. 3

(C) From the following information find out Fisher's Ideal Index number :

$\Sigma p_0 q_0 = 970$ $\Sigma p_0 q_1 = 900$

$\Sigma p_1 q_0 = 1760$ $\Sigma p_1 q_1 = 1660$ 4

(D) Calculate consumer Price Index Number from the following data by using Family Budget Method :

Commodities	Base Year		Current Year	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	4	2	6	3
B	3	5	2	1
C	8	2	4	6

4

OR

(E) Explain the functions of Statistics. 3

(F) "Classification is the process of arranging data into sequences and groups according to their common characteristics of separating them into different but related parts."

Count the number of letters in each word of above stanza and make a frequency distribution showing the number of words with different number of letters. 3

(G) Calculate Laspeyre's Price Index and Paasche's Price Index from the following information :

Commodities	Base Year		Current Year	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	15	10	20	8
B	20	12	24	10
C	10	7	15	6
D	30	5	35	7
E	25	2	30	3

4

(H) Calculate Consumer Price Index Number from the following data by using Aggregate Expenditure Method :

Commodities	Base Year		Current Year	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	8	4	12	6
B	6	10	4	2
C	16	4	8	12

4

3. (A) The arithmetic mean of marks in Economics of 100 students was found to be 30. Later on it was found that the marks 30 of students were misread as 20. Find the correct mean. 3

(B) Find out mode from following information :

Modal class 12—16

Frequency of the class preceding modal class — 12

Frequency of the modal class — 16

Frequency of the class succeeding the modal class — 14 3

(C) Calculate the Geometric Mean from following series :

2.156

1.372

0.9814

0.0903

0.0082

0.0005

0.0078

0.0009 4

(D) In an asymmetrical distribution Arithmetic Average is 24.6 and Mode is 26.1. Find the Median. 4

OR

(E) The mean rainfall at a certain place from Monday to Saturday is 3.5 cm. Due to heavy rainfall on Sunday the average for whole week increase to 5 cm. What was rainfall on Sunday ? 3

(F) Find out Harmonic Mean from following data :

0.8974
0.0570
0.0081
0.5677
0.0002
0.0984
0.0854
0.5672 3

(G) If the Mean and Median of moderately asymmetrical series are 26.8 and 27.9 respectively, what would be its most probable Mode ? 4

(H) From following information find out Median :

Marks	No. of Students
More than 70%	7
More than 60%	18
More than 50%	40
More than 40%	40
More than 30%	63
More than 20%	65

4

4. Goals scored by two teams—A and B in a football season were as follows :

No. of Goals Scored in Match	No. of Matches	
	Team A	Team B
0	27	17
1	9	9
2	8	6
3	5	5
4	4	3

Find which team may be considered more consistent. 14

OR

From the following groups calculate the Coefficient of Skewness and determine which group is more skewed :

Marks	Group A	Group B
55—58	12	20
58—61	17	22
61—64	23	25
64—67	18	13
67—70	11	07

14

5. From the following data calculate the coefficient of correlation between age of students and their playing habit :

Age Group (Year)	No. of Students	No. of Regular Players
15—16	200	150
16—17	270	162
17—18	340	170
18—19	360	180
19—20	400	180
20—21	300	120

14

OR

From the following table interpolate the number of students getting less than 45 marks :

Marks Obtained	Number of Students
30—40	31
40—50	42
50—60	51
60—70	35
70—80	31

14

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(मराठी माध्यम)

सूचना :—(1) सर्व प्रश्न सोडविणे अनिवार्य.

(2) सर्व प्रश्नांना समान गुण आहेत.

(3) प्र.क्रं. **2** मधील उर्वरीत प्रश्न व त्याची आणि बाकी सर्व प्रश्न इंग्रजी माध्यमाने सोडवयाची आहेत.

2. (अ) सांख्यिकी चे महत्व स्पष्ट करा. 3

(ब) प्राथमिक व दुय्यम समंक यातील अंतर स्पष्ट करा. 3

किंवा

(इ) सांख्यिकीची कार्ये स्पष्ट करा. 3

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(हिन्दी माध्यम)

सूचना :—(1) **सभी** प्रश्न अनिवार्य हैं।

(2) सभी प्रश्नों के अंक समान हैं।

(3) प्रश्न क्रं. **2** के उर्वरित उपप्रश्न व बाकी सभी प्रश्न अंग्रेजी माध्यम के अनुसार हल कीजिये।

2. (अ) सांख्यिकी का महत्व स्पष्ट कीजिये। 3

(ब) प्राथमिक तथा दुय्यम (गौण) समंक के बीच का अंतर स्पष्ट कीजिये। 3

अथवा

(इ) सांख्यिकी के कार्य स्पष्ट कीजिये। 3