B.Com. (Part–II) Examination
COMMERCE
(Business Mathematics and Statistics)

Time : Three Hours] [Maximum Marks : 70

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

(2) All questions carry equal marks.

1. (A) Find the L.C.M. of 42, 28 and 70. 3

(B) If 4 tractors can plough 160 hectares in 8 days, how many hectares will 6 tractors plough in 15 days ? 3

(C) Find the compound interest on Rs. 50,000 for 3 years at 10% for first year, 12% for second year and 14% for third year. 4

(D) On selling a book for Rs. 1,000 a bookseller made profit of 25% on cost. What is the cost price of the book ? 4

OR

(E) Find out H.C.F. of 117, 208 and 260. 3

(F) Find out the difference between the simple and compound interest on Rs. 40,000 at 10% p.a. for 2 years. 3

(G) Today Vijay is three times old as his sister Sunita. The sum of their ages is 60 years. What is their age today ? 4

(H) At an election 10% of total voters did not cast their votes. 400 votes were declared illegal. There were only two contestants A and B. A defeated B by 640 votes. It was found that 60% legal votes had been secured by A. Find the total number of voters as per the voting list. 4

2. (A) Explain the meaning of classification. 3

(B) Explain the limitation of statistics. 3

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

$\varepsilon p_0q_0 = 1940$ $\varepsilon p_0q_1 = 1800$

$\varepsilon p_1q_0 = 3520$ $\varepsilon p_1q_1 = 3320.$ 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	Quantity
A	16	8	24	12
B	12	20	8	4
C	32	8	16	24

4

OR

(E) Explain the meaning of statistics. 3

(F) Distinguish between classification and tabulation. 3

(G) Calculate Laspeyrre's price index and Paashe's price index from the following information :

$\varepsilon p_0q_0 = 5000$ $\varepsilon p_0q_1 = 7000$

$\varepsilon p_1q_0 = 6000$ $\varepsilon p_1q_1 = 8000$ 4

(H) Explain the importance of index number. 4

3. (A) Mean of 20 values is 45. If one of these values is to be taken as 64 instead of 46. Find out corrected mean. 3

(B) Calculate Geometric mean of the following series :

Wages (in Rs.)	No. of Workers
40–50	12
50–60	10
60–70	15
70–80	17
80–90	8
90–100	3

3

(C) In an asymmetrical distribution mean is 34.9 and median is 40. Find out mode. 4

(D) Find out median from following information :

Median class 20 – 30

N/2 or m = 50th items.

Frequency of median class = 40.

Cumulative frequency of the class preceding the median class = 38. 4

OR

(E) If the mean and mode of moderately asymmetrical series are 52 and 54 respectively. What would be the median ? 3

(F) Find out missing frequency from following data. If mean of frequency distribution is 67.45 marks.

Marks	Frequency
60–62	15
63–65	54
66–68	?
69–71	81
72–74	24

3

(G) Find out the Harmonic mean from following data :

Class	Frequency
5–15	15
15–25	30
25–35	25
35–45	10
45–55	15

4

(H) Find out the mode from following data :

Mid Value	Frequency
10	4
20	8
30	20
40	16
50	10
60	6

4

4. From the following data calculate Karl Pearson's coefficient of skewness from the following data :

Marks	No. of Students
More than – 0	150
More than – 10	140
More than – 20	100
More than – 30	80
More than – 40	80
More than – 50	70
More than – 60	30
More than – 70	14
More than – 80	0

14

OR

Calculate the coefficient of variation of following two series and show which series has more variation :

Weight (Kg.)	Class A	Class B
20–30	7	5
30–40	10	9
40–50	20	21
50–60	18	15
60–70	7	6
70–80	4	3

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5. From the following data find out if there is any relationship between density of population and death rate :

District.	Area in (sq. km.)	Population '000	No. of Death
1	1,000	700	14,000
2	1,100	660	10,560
3	800	240	4,320
4	600	180	3,060
5	900	270	5,130
6	500	200	3,000

14

OR

From the following temperature reading taken on a particular day, estimate at 10 A.M. :

Time	Temperature in °C
4 A.M.	42.2
8 A.M.	44.4
12 Noon	53.0
4 P.M.	46.6

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(मराठी माध्यम)

सूचना :—(1) सर्व प्रश्न सोडविणे अनिवार्य आहेत.

(2) सर्व प्रश्नांना समान गुण आहेत.

(3) प्र. क्र. **2** मधील उर्वरीत प्रश्न व त्यांची आणि बाकी सर्व प्रश्न इंग्रजी माध्यमाने सोडवायाची आहे.

2. (अ) वर्गिकरणाचा अर्थ स्पष्ट करा. 3

(ब) सांख्यिकीच्या मर्यादा स्पष्ट करा. 3

किंवा

(इ) सांख्यिकीचा अर्थ स्पष्ट करा. 3

(फ) वर्गिकरण व सारणीयन यातील अंतर स्पष्ट करा. 3

(ह) निर्देशांकाचे महत्व स्पष्ट करा. 4

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(हिन्दी माध्यम)

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

(2) सभी प्रश्नों के अंक समान हैं।

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

2. (अ) वर्गीकरण का अर्थ स्पष्ट कीजिये। 3

(ब) सांख्यिकी की मर्यादायें स्पष्ट कीजिये। 3

अथवा

(इ) सांख्यिकी का अर्थ स्पष्ट कीजिये। 3

(फ) वर्गीकरण तथा सारणीयन में अंतर स्पष्ट कीजिये। 3

(ह) सूचकांक का महत्त्व स्पष्ट कीजिये। 4