

Fakir Chand College

B.Com Semester-III(Honours/General/Major)2020

Internal Assessment

Subject: Business Mathematics and Statistics

Paper Code: GE 3.1.Chg

Full Marks = 10

Answer any two:

$2 \times 5 = 10$

1. If $A = \{1,2,3\}; B = \{2,3,4\}; S = \{1,3,4\}; T = \{2,4,5\}$, verify that
 $(A \times B) \cap (S \times T) = (A \cap S) \times (B \cap T)$. 5
2. Find by the Arithmetic Mean Method, the Index Number from the following data:

Commodity	Base Price(Rs)	Current Price(Rs)
Rice	30	35
Wheat	22	25
Fish	54	64
Potato	20	25
Coal	15	18

3. Prove that $\log_2 \log_2 \log_2 16 = 1$. 5

Fakir Chand College

B.Com Semester-III(Honours/General/Major) Supplementary

Examination(Under CBCS),2020

Subject: Business Mathematics and Statistics

Paper Code: GE 3.1.Chg

Full Marks:80

Module I: Business Mathematics

Answer any two:

$2 \times 20 = 40$

1. A) If $nP_5 : nP_3 = 2 : 1$, find the value of n . 10

B) Prove that $7 \log \frac{16}{15} + 5 \log \frac{25}{24} + 3 \log \frac{81}{80} = \log 2$. 10

2. A) Show that $nC_r = \frac{n-r+1}{r} \cdot nC_{r-1}$ (with usual notations). 10

B) Find the 6th term in the expansion of $\left(2x - \frac{1}{x^2}\right)^7$. 10

3. A) If $A = \{1,2,3,4\}$; $B = \{2,4,6,8\}$; $C = \{3,4,5,6\}$ Prove that $A \cap (B \cap C) = (A \cap B) \cap C$. 10

B) In what time would a sum of money treble itself at 8% compound interest. [$\log 1.08 = 0.03342$; $\log 3 = 0.47712$] 10

Module II: Statistics

Answer any two:

$$2 \times 20 = 40$$

1. A) Calculate the co-efficient of correlation between X and Y series from the following data: $\sum_{i=1}^{15} (X_i - \bar{X})^2 = 136$, $\sum_{i=1}^{15} (Y_i - \bar{Y})^2 = 138$ and $\sum_{i=1}^{15} (X_i - \bar{X})(Y_i - \bar{Y}) = 122$. 10

B) When the cost of cigarette was increased by 50%, a smoker who maintained his former scale of consumption said that the rise of cigarette price has increased his cost of living by 5%. What percentage of his cost of living was due to buying cigarette before the change of price? 10

2. A) A man draws at random 3 balls from a bag containing 6 red and 5 white balls. What is the chance of getting the balls all red? 10

B) From the case given below find out whether the data are consistent or not:
Case: (A)=100, (B)=150, (AB)=60, N=500 10

3. A) Using three – yearly working averages, find the trend values and short term fluctuations for the

Year	1	2	3	4	5	6	7
Value	2	4	5	7	8	10	13

10

B) If a dice is tossed what is the probability that the number appearing at the top is even. 10