

PGD in PFE Sem.-1 Examination

PGPFE-102

Public Economics

January-2025

[Max. Marks : 70]

Time : 2-30 Hours]

- Q1 From the following frequency distribution obtain the first four moments about '12' and hence, find central moments, and mean, standard deviation, skewness and kurtosis. Also find γ_1 and γ_2 . (14)

X_i	10	11	12	13	14	15	16	Total
F_i	2	9	25	30	20	10	4	100

- Q2 Explain Simple Linear Regression model. Discuss its assumptions. Illustrate the model through example. (14)

Or

- Q2 For the data set given below: (14)

X	Y
10	8
20	12
30	15
40	20
50	22

- 1) Compute β_0 and β_1 .
- 2) Derive the regression equation.
- 3) Find the R^2

- Q3 From the following tri-variate data, obtain regression coefficient equation of X_3 on X_1 and X_2 and estimate the value of X_3 when $X_1 = 24$ and $X_2 = 10$ (14)

X_3	5	4	7	8	4	3
X_1	11	13	17	18	13	15
X_2	5	7	6	4	1	2

Or

- Q3 Find the coefficient of regression in matrix form from the following table and fit in the model: (14)

X_1	X_2	Y
14	5	3
12	7	2
10	8	5
8	4	7

- Q4 A book has 600 pages and 250 typos. (14)
- (a) What is the probability that the first five pages have no typos?
 - (b) What is the probability that the first five pages have at most two typos?

Or

(P.T.O)

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- Q4 Inland Revenue audits 5% of all companies every year. The companies selected for auditing in any one year are independent of the previous year's selection. (14)
- What is the probability that the company 'Ross Waste Disposal' will be selected for auditing exactly twice in the next 5 years?
 - What is the probability that the company will be audited exactly twice in the next 2 years?
 - What is the exact probability that this company will be audited at least once in the next 4 years?

- Q5 Explain the following: (14)
- Dispersion
 - Kurtosis
 - Standard Deviation
 - Econometrics
 - Multicollinearity
 - Multiple Regression
 - Homoscedasticity
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