

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

**PGDM & PGDM (GENERAL) (2022-23)
END TERM EXAMINATION (TERM - I)**

Subject Name: Quantitative Techniques for Managers

Time: **02.30 Hrs.**

Sub. Code: PG-14

Max Marks: **40**

Note:

All questions are compulsory. Section A carries 5 marks: 5 questions of 1 marks each, Section B carries 21 marks having 3 questions (with internal choice question in each) of 7 marks each and Section C carries 14 marks one Case Study having 2 questions of 7 marks each.

SECTION - A

Attempt all questions. All questions are compulsory.

1×5 = 5 Marks

Q. 1: (A). Discuss the importance of coefficient of Determination (R^2) and its interpretation.

Q. 1: (B). Define and differentiate between Nominal, Ordinal, Interval and Ratio Scale with example.

Q. 1: (C). Which Factory is consistent in terms of daily wages?

	Factory A	Factory B
Avg. Daily Wages	120	85
Variance of Daily Wages	16	25

Q. 1: (D). Define the concept and applicability of Poisson distribution.

Q. 1: (E). How Delphi Method of forecasting is used in the Industry?

SECTION – B

All questions are compulsory (Each question have an internal choice. Attempt any one (either A or B) from the internal choice)

7 x 3 = 21 Marks

Q. 2: (A). Time taken by a crew of a company to construct a small bridge is a normal variate with mean 400 labour hours and standard deviation of 100 labour hours.

a) What is the probability that the bridge gets constructed between 350 to 450 labour hours?

b) What is the probability that the bridge gets constructed in more than 480 labour hours?

OR

Q. 2: (B). Explain and categorize the following as Probability and Non-Probability Sampling techniques. a) Simple Random Sampling b) Stratified Sampling c) Quota Sampling d) Snowball Sampling

Q. 3: (A). Find the Variance and Standard deviation for the following distribution

Gross profit as percentage of Sales	0-10	10-20	20-30	30-40	40-50
Number of Companies	22	38	46	35	20

OR

Q. 3: (B). Which student should be awarded with the Science scholarship? Take decision using the following tools a) Arithmetic Mean b) Weighted Mean and compare the results.

Subjects	Weights	Student A	Student B
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Physics	4	67	72
Chemistry	3	71	77
Maths	2	63	70
English	1	87	59

Q. 4: (A). Predict the estimated Production for the year 2022 based on the data using regression trend analysis.

Year	2010	2011	2012	2013	2014	2015	2016
Production (Quintals)	70	80	82	73	84	89	82

OR

Q. 4: (B).

Predict the estimated Production for the year 2020 based on the data using 3-Yearly Moving Average (Smoothing Method)

Year	2010	2011	2012	2013	2014	2015	2016
Production (Quintals)	80	90	92	83	94	99	92

SECTION - C

Read the case and answer the questions

7×02 = 14 Marks

Q. 5: Case Study:

Data:

Price (Rs)	Demand (N)
10	100
9	120
8	140
7	160
6	175
11	90
12	70
13	55
14	40
15	25

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	274.09091	3.724777435	73.5858488	1.29585E-12
Price (Rs)	-16.81818	0.342169388	-49.1516261	3.24897E-11

Question:

Q 5(A): Determine Coefficient of Correlation from the data and interpret the result

Q 5(B): Based on the data analysis, develop a Regression Model and test the hypothesis.

Mapping of Questions with Course Learning Outcome

Question Number	COs	Bloom's Taxonomy Level	Marks Allocated
Q. 1:	CO1	L1, L2	5 marks
Q. 2:	CO2	L3	7 marks
Q. 3:	CO3	L4	7 marks
Q. 4:	CO4	L4, L5	7 marks
Q. 5:	CO3, CO4	L6	14 marks

Note: Font: Times New Roman, Font size: 12.