

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)**

CLASS: IMSc.
BRANCH: QEDS

SEMESTER : VI
SESSION : SP/2025

SUBJECT: ED315 APPLIED ECONOMETRICS

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

- Q.1 You are given the following data on prices [5] CO 1 BL 4
- | Commodity | A | A | A | B | B | B | C | C | C | D | D | D |
|--------------------|----|---|----|---|---|---|----|----|----|----|----|----|
| Market | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Base year price | 6 | 5 | 7 | 5 | 4 | 6 | 10 | 13 | 11 | 20 | 23 | 21 |
| Current year price | 10 | 9 | 12 | 7 | 8 | 8 | 15 | 14 | 17 | 27 | 29 | 30 |
- Calculate the elementary price indices for each of the commodities using Jevon's index and Carli index.
- Q.2 Using the results in question (1) calculate the price index using Laspeyres's price index. Assume all commodities have equal weights. Compare the price index numbers obtained using Jevon's index and Carli index as elementary price indices. [5] 1 3
- Q.3 Write the pdf and cdf of the Pareto distribution. Derive the Lorenz curve of the Pareto distribution. [5] 2 3
- Q.4 Which indicators were included in the calculation of poverty line by the Task Force Rangarajan to include human capabilities? Explain briefly how they were included in the measurement of poverty line. [5] 2 2
- Q.5 Suppose a consumer's utility is given by the function $u = x^\alpha y^\beta$ and the consumers budget set is given by $p_x x + p_y y \leq M$, where x and y are commodities and p_x is the price of commodity x and p_y is the price of commodity y and M is the consumer's income. Find the demand function of x and y. Find the indirect utility function of the consumer. The indirect utility function is a function of which parameters? [5] 3 3

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