BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2023)

CLASS: BTECH   SEMESTER : IV
BRANCH: P&IE   SESSION : SP/2023

SUBJECT: PE221 QUANTITATIVE TECHNIQUES
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(a)	Describe the different types of data as per measurement scales.	[2]
Q.1(b)	Calculate Mean, Variance, and Median of the following data set.	[3]

Data Set: 55, 59, 50, 27, 55, 57, 25, 29, 34, 36, 27, 59, 51, 31, 41, 61, 64, 64, 65, 45, 44, 41, 36, 28

Q.2(a)	What is sampling method? How it is different from Census method?	[2]
Q.2(b)	What are the various types of sampling techniques?	[3]

Q.3	Write short notes on any TWO of the following.	[2.5x2]

a)Simple random sampling, b) Cluster sampling, c) Quota sampling

Q.4(a)   Frame at least two research questions, hypothesis, and null-hypothesis from any one of the [3]
following topics.
i) Food behavior of students at BIT Mesra ii) Sports culture at BIT Mesra

Q.4(b)   Develop sample questioner to collect data for testing the hypothesis developed in question 4(a).   [2]

Q.5   Honorable Vice Chancellor of BIT Mesra wants to estimate the mean research grant earned by a   [5]
faculty member at BIT Mesra. He has taken a sample of 15 faculty members. The grants earned
by each of these faculty members from various government and non-government sources are
given below. It is also known that the standard division of the grants earned by the faculty
members at BIT Mesra is 3 lacks. Estimate the range within which the mean research grant
earned by any faculty member at BIT Mesra will fall with 97% confidence level.
Grants earned by the sampled 15 faculty members (in lacks): 10, 2, 0, 5, 7, 3, 2, 2, 1.5, 6, 0.5,
8, 18, 15, 1

::::::24/02/2023::::::M