

## **Guidelines for Practical Evaluation - Statistics**

The subject statistics has a wide range of practical application in all walks of life. Use of proper data and its analysis are very importance. In the present scenario of outcome based approach, the learning activities should go hand in hand with the related practical situations. Now a day's almost all data analysis can be successfully done using computers.

The guidelines for conducting practical examination for higher secondary STATISTICS are given below in detail.

There will be Practical Evaluation only for second year students, but the portions from first year also included in examination. Teachers can conduct lab works in first year itself (if needed), but the final assessment will be done only at the end of second year.

Maximum Score : 40

Maximum time allowed: 3 hrs.

### **Topics for PE**

1.	Diagrams and graphs	Simple Bar diagram, Multiple bar diagram, Sub divided bar diagram, Percentage bar diagram, pie diagram, Histogram, Scatter diagram, Control charts using line charts(SQC).
2.	Descriptive statistics	Construction of frequency table, Mean, median, mode, quartiles, skewness, kurtosis. Normal probability, Poisson probability, binomial probability
3.	Correlation and Regression	Karl Pearson's coefficient of correlation, Regression equations, Forecasting using Regression equations, Trend line fitting (straight line), Estimation of trend values, moving averages.
4	Testing of Hypothesis	Z test - two sample for means, F test – ANOVA one variable, Chi square test for independence.

## **Evaluation Process**

The question paper contains four sections related to the topics given above which will be supplied by DHSE to the external examiner. Each section carries 4 questions. External examiner can prepare question paper consists of four questions. External examiner should ensure that there is one question from each section. Change of question paper may be allowed with a penalty of 2 scores for each change.

Each question carries 8 scores.	8x4 = 32 scores
Record work.	4 scores
Content awareness/Viva voce	4 scores
Total	40 scores

### **Score distribution for each question:**

1. Identifying the questions .....	1
2. Data entry .....	2
3. Selecting appropriate statistical tool .....	2
4. Processing the data .....	2
5. Interpretation of the result/conclusion .....	1
<b>Total Scores</b> .....	<b>8</b>

\*\*\* All the problems should be done using computer

### **For practical examination**

- Computerized procedure
- Output of the problem
- Inference

## Contents of Record

\*Different types of problems from the PE topics cited above.

### 1 Diagrams and graphs

Simple Bar diagram	- one problem
Multiple bar diagram	- one problem
Sub divided bar diagram	- one problem
Percentage bar diagram	- one problem
Pie diagram	- one problem
Histogram	- one problem
Scatter diagram	- one problem
Control charts	- one problem

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**8 problems**

### 2 Descriptive statistics

Construction of frequency table	- one problem
Mean, median, mode, quartiles, skewness, kurtosis.	- one problem
Normal probability	- one problem
Poisson probability	- one problem
Binomial probability	- one problem

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**5 problems**

### 3 Correlation and Regression

Karl Pearson's coefficient of correlation	- one problem
Regression equations	- Two problems ( Yon X and XonY)
Forecasting using Regression equations	- one problem
Trend line fitting (straight line)	- one problem
Estimation of trend values	- one problem
Moving averages	- two problems (odd,even cases)

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**8 problems**

#### 4 Testing of Hypothesis

Z test - two samples for means	- two problems (Population SD known & unknown)
F test – ANOVA one variable	- two problems (Row and Column)
Chi square test for independence	- one problem

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**5 problems**

**Total 26 problems**

#### Structure of Record:

- Aim : The objective of the problem.
- Principle : Theory of the problem.
- Computational procedure : The PATH for solving the problem using computer.
- Data analysis : Computer printout or manual write up.
- Inference : Interpretation / conclusion.

#### Reference

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Statistics made simple do it yourself on PC, by K.V.S.Sarma, Prentice- Hall of India Pvt. Ltd.  
Any book related to these areas.