## Appendix-A

## CLASS OBSERVATION FORM

Name of teacher: $\qquad$
Class: $\qquad$ Topic: $\qquad$ Period: $\qquad$ Time $\qquad$
Total Number of students: $\qquad$ Male: $\qquad$ Female: $\qquad$

|  | Observed Items | Yes/No |
| :--- | :--- | :--- |
| I. | Pre... |  |
| 1) | The availability and quality of furniture, chalkboard. |  |
| 2) | Motivation provided |  |
| 3) | Review/preview provided |  |
| 4) | Teacher presentation of lesson |  |
| II. | While... |  |
| 1) Materials presented |  |  |
| 2) Students participation in the class |  |  |
| 3) Opportunities provided for questioning to students? |  |  |
| 4) Many examples provided to concepts |  |  |
| III. | Post..... |  |
| 1) Summarization of unit |  |  |
| 2) The quality of classwork and homework |  |  |
| 3) Checking the achievement of objectives |  |  |
| 4) Appropriate feedback provided |  |  |

## Appendix-B

## Interview Guidelines for Mathematics Teacher

Name: Qualification:
Age:
Sex:
College name: Teaching Experience: Training:
Open- ended questions:
Classroom Management:

- Difficulties in completion of limits if taught using teaching materials, are you agree?
- What kinds of problems do you find during teaching limit?

Pre concept of students for learning:

- Poor foundation of students in lower level possess problem in teaching learning limits?
- What kinds of pre knowledge are necessary for teaching learning limits?


## Teacher training (Pre- service and in -service):

- Is refreshment training is regularly?
- Are teacher training is sufficient? If not what type of training, seminar and conferences do you need?

Teaching methods and materials:

- What kinds of teaching strategies do you follow for teaching limits?
- Do you use lesson plan regularly?

School management and administration:

- What do you aspect more from school administration to make class effective?
- Is mathematics teaching manual, other journals available in your college which helps teaching learning limit?


## Appendix-C

## Interview guidelines for students

Campus Name \& Location $\qquad$

Types of campus: a) Government ( )
Name $\qquad$
Roll. No $\qquad$ Position in the class $\qquad$ Sitting position in the class Caste/Ethnicity $\qquad$

Family status (about education) $\qquad$

## Open- ended questions:

## Classroom Management:

- Do you participate class works for practice?
- Does the teacher give appropriate feedback regularly?

Pre concept of students for learning:

- Does the teacher give pre concept, understanding before teaching limit?
- Is this chapter (Limits) related to lower classes?
- Does the teacher give appropriate feedback regularly?

Teaching methods and materials:

- Does your teacher use locally available and low cost materials in teaching limits?
- Does your teacher use various methods and materials in classroom activity?

School management and administration:

- Do you have any problems of chalk, board and other furniture in your classroom?
- Is mathematics teaching manual, other journals available in your college which helps teaching learning limit?


## Appendix-D

Observation sheet to the teachers on factors responsible for the difficulty and suggestion measures in the teaching and learning of limits in Grade XI.

| S/N | Items | Responses |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | SA | A | D |
| Classroom Management |  |  |  |  |
| 1 | There is a mathematics laboratory or mathematics lab in school |  |  |  |
| 2 | Board is good and enough space in mathematics classroom |  |  |  |
| 3 | Difficulties in completion of limits course if taught using teaching materials |  |  |  |
| 4 | School is well equipped with desk and bench in the classroom according to the number of students |  |  |  |
| 5 | Boredom feeling in limits teaching. |  |  |  |
| Mathematical Instruction, Method and Materials |  |  |  |  |
| 6 | Teaching machine and computer are available in limit classroom |  |  |  |
| 7 | I don't make plans (yearly as well as unit) because I don't know how to do it |  |  |  |
| 8 | There is a lack of proper space to demonstrate instructional materials |  |  |  |
| 9 | Library facility is available |  |  |  |
| 10 | The room is equipped with a graph and bulletin board |  |  |  |
| 11 | I make daily lesson plans |  |  |  |
| 12 | Some of the portion of limits are difficult to teach |  |  |  |


| 13 | Refreshment training is given regularly |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 14 | I make and frequent use of instructional materials (other than text <br> book ) to motive my students and make limits more meaningful |  |  |  |
| School Management and Administration |  |  |  |  |
| 15 | Compulsion to take more classes because of low number of <br> mathematics teacher | Irresponsible administration to manage and construct necessary <br> teaching materials |  |  |
| 17 | Refreshment training is given regularly |  |  |  |
| 18 | Lack of facilities and reward for the good performance |  |  |  |

If you have faced any other problem then mention below:
a)
b)
c)

