6. Discussions

6.1 Conclusion:

The present thesis which actually deals with the grading pattern of the pre degree level students gives us several interesting points to be noted.

Though result analysis and grading pattern has been studied by many educationists based on the available examinations data, stochastic pattern is hardly studied by authors. The stochastic modelling of the grading pattern presents us some interesting behaviour under the model considered in the thesis.

In the second chapter it is seen that even if a student transits from the state of excellence to the state of excellence, his or her transition is based on only one observation. If same trend follows and the number of tests are increased, the probability of transition differs significantly. In fact it has been observed theoretically that if the number of tests are increased, students have a tendency of transiting to the middle grade, i.e. grade ‘1’, either from the state of excellence or from the state of disaster, i.e. from grade ‘0’ and grade ‘2’ respectively. Therefore, a student cannot be assumed to be a very good student or a very bad student, just from the result of one test.

In the third chapter, an interesting result was found when the time period between two consecutive tests is assumed to be an interval of random
length. The transition probabilities \( p_{02} \) and \( p_{20} \), i.e. the probability of transition from state 0 to state 2 and state 2 to state 0 respectively, which were found to be almost equal to zero in the baseline model (2.3.2), changes drastically when the assumption of non-random time interval is dropped. It is noticed that in that case there is positive probabilities of transition from state '0' to state '2' or from state '2' to state '0', however small it may be.

Again it is also theoretically proved that a student entering in an institution with better grade will always show better results, when time interval between two tests is random.

An interesting result has been noticed when the state space of the continuous time Markov Chain has been reduced from size 3 to size 2. In this case it is seen that as the random interval becomes very large, probability for a student being successful or unsuccessful becomes same.

The theoretical analysis of results seems to be quite negligible till date. Researches in the field of education are found to be more interested in analysing observed data obtained from various examinations. In our work we are trying to analyse the results from various angles. The performance of various institutions are judged from the theoretical point of view. Also the analysis of result is conducted for the whole on going educational system theoretically.

The fifth chapter of this thesis seems to be more interesting in the sense that it has been studied from quite a different view point. Here it has been
showed that though it is possible to obtain the estimates of transition probabilities available under standard method, in real life situation, those estimators may not be valid. The transition from one grade to another are found to be highly sensitive to the socio-economic conditions prevailing in the society. That is why we assume here $p_{ij}$'s to be random variables instead of constants and in that case Bayesian inference comes forward to solve our problem.

6.2 Future scope of study

A study on the material under review suggests that examination results on grading pattern has wide scope for exploitation.

Sometimes back there was a sensational and alarming news in the national daily's that the number of students studying subjects like mathematics, and natural sciences are decreasing all over the country. A scientific study on the matter by collecting relevant data for last 10 to 15 years from different educational institutions may be made. This will help us to draw clear picture on the topic and to suggest remedies of various problems arising out of the subject.

There is also a scope to make a study relating to grade inflation, especially by the private institutions, with high grade points and can discuss the job prospects of the students with such certificates.
A stress-strength model may also be build up by considering the work load on the students by the educational system and their capacity to survive the load pressure. The former one may be defined as stress and the later as strength.

Skill pattern and grade related studies also is another field to be explored. Different skills of a student say, (i) understanding, (ii) memorising (iii) representing can be defined and its patterns to achieve success may be studied.

Again if institutions are categorised according to their performance levels and the number of students are classified according to the grades, we have a two way classified data set from which we can study the significant difference of performance between different institutions.