



## **MCQ ONLINE**

Computer Based Examination Software

'MCQ ONLINE' is a software for conducting paperless examinations. It has the potential to raise the knowledge of students at par with international standards. It can also render examination-work efficient, transparent, fast and economic for examination-conducting authorities like schools, colleges and universities.

### **INTRODUCTION**

With introduction of computer technology, research in all technical sciences has gathered unprecedented momentum. With announcement of a new advancement every other day, quantum of information on every scientific front is growing phenomenally. It has become imperative to keep science and technical students abreast of all the technical details of their subjects. Knowledge and expertise have become the keywords for progress and prosperity of an individual, society, nation and mankind. The objective of enhancing knowledge of the student in any discipline can be effectively achieved by adopting appropriate examination (assessment) system, since every student prepares and reads his subject in accordance to the depth of the knowledge demanded by the examination system.

Present day descriptive examination system has become obsolete. It defeats the purpose of assessment (i.e. to ensure that students prepare their subjects thoroughly) due to its following drawbacks:

1. Since it is not possible to ask questions of one or two marks (paper checking would become tedious in such case), questions in the question paper carry 4, 5 or 10 marks. This eliminates possibility of evaluating the knowledge of micro-details. Students tend to avoid micro-details and prepare only gross details of the subject.
2. Since individual questions carry 4 to 5 marks, number of questions and therefore, number of topics covered in the question paper, is restricted to a narrow range i.e. all topics of the subject can not be covered.
3. During examination a student has to indulge in to exhaustive writing, filling up pages together of supplementary (answer books). Thus, whereas the main purpose of examination is assessment of the knowledge, 80% of examination time is spent in writing and only 20% in expression of knowledge: a huge waste of effort.
4. Written tests cause unnecessary wastage of millions of supplementary, a needless wastage of paper and consequently of trees.
5. The system is unjust to the students who, although possess more knowledge, cannot write with sufficient speed or do not have good handwriting.
6. Paper setting and paper checking procedures for written examination are tiresome and time consuming; hence, during each academic year only two or three internal tests are conducted. Thus, students avoid studying on daily basis and tend to prepare for the examination only during last lag of the academic year.
7. Declarations of results of such written examinations always take very long time and yet, are many-a-times erroneous due to manual nature of the procedures.

Mindful of these drawbacks of the present day examination pattern, we have developed a new computer-based examination system, which will not only enhance the knowledge of the students but will also obviate accompanying delays, wastages and errors.

## **THE SYSTEM**

General description and working of the 'MCQ Online' software are as follows:

During the computer-based examination, each candidate faces a computer (30 - 60 computers may be connected in a network in the examination hall, local area network i.e. LAN). Before start of the test the candidate has to enter details like class, subject, exam no. etc and click the START TEST button. When start button is clicked, each computer in the network randomly (and independently of other computers) prepares a set of 100 multiple choice questions from a database containing 3000 to 5000 MCQs. MCQs are displayed, one by one, on computer screen.

After reading the question the candidate clicks on one correct choice out of five choices (answers) and then click NEXT button, whereupon next question appears on the computer screen. For a test of 100 marks there will be 100 MCQs to be attended within 100 minutes (number of MCQs, time duration of exam, positive and negative marks of each MCQ etc are at the discretion of the examiner and can be set before the start of examination). At the end of 100 minutes or after completing 100 MCQs, the candidate clicks END TEST button. On clicking the END TEST button the computer immediately displays the result (marks scored) on the screen. All computers in examination hall (connected by network i.e. LAN) report individual marks of candidates to the main computer i.e. server (for mark sheet).

## **SALIENT FEATURES AND ADVANTAGES**

1. Any full question or short note can be fragmented in to number of small MCQs. Since, for every micro-detail of the subject one MCQ can be designed, knowledge of the candidate can be thoroughly assessed, which is not possible in present pattern of examination.
2. Administrator has the full rights for creating Question Bank. He/she can create Test as per the requirement, like creating Test of 50 Questions from selected chapters only which can be of 30 minutes duration. Admin can also decide whether to allow Negative Marking or not.
3. Computer, on basis of random selection of questions, will set the question paper. Consequently every candidate will get a different set of questions. This arrangement will eliminate chances of copy cases in examinations.
4. Computer will set the question paper instantly (duration and number of questions can be predefined by examiner) at the time of examination, when the candidate will click start test button. Instant paper setting by computer at the time of starting of the exam will leave no chance of leaking of the question paper.
5. Although, every candidate will get a different set of MCQ, the difficulty level of question paper for each candidate will be same for all candidates. To achieve this, while database is being prepared, each MCQ will be labeled as level-1 (easy), level-2 (medium) or level-3 (hard) question. At the time of conducting examination, the examiner will specify, for example 20 % level-1 questions, 60 % level-2 questions and 20 % level-3 questions. Thus while generating question paper, the computer will select, randomly, 20 easy questions, 60 medium questions and 20 hard questions from database, for each candidate (for 100 questions) thus maintaining equal difficulty level for all candidates.
6. By adjusting percentage of easy, medium and hard questions, examiners can determine mode of overall examination standard i.e. easy question paper, medium question paper or hard question paper.
7. At the end of an examination, computer will immediately display the score (marks). (No procedure for paper checking, No delay in result declaration)
8. Question paper attended by each candidate from every computer in network (LAN)

will be reported back to server for storage. In case of doubt (rechecking) any candidate will be able to see the question paper with his answers and marks obtained for individual questions.

9. Sufficient database of MCQ from which, computer randomly selects the questions, will be according to the syllabus. (No chance of out-of-syllabus questions)
10. Storage of exam papers and other records related to examination are on computer (and then on CD) so, it will be easy to preserve and maintain all records for future references.
11. No answer books. Hence, it will save money in terms of millions of rupees (for example any university alone, spends around Rs. 1 crore on answer books each year). i.e. economically advantageous to the institute. Preventing loss of papers will also help in conserving trees i. e. the system is ecofriendly.
12. The computer will carry out assessment. (No examiner bias, No errors in paper checking, No chance of undue favors by examiners). Thus, the system is transparent.
13. Due to absence of paper setting and paper checking; frequent assessment i.e. test exams (as advocated by AICTE and UGC) will be possible, during each academic year.
14. Since, It is maintaining all the records, It is much easier to generates reports like class wise and student wise mark-statements, student wise history of exams given for checking their progress etc. Finally, by application of this program, without any manual interference, mark-sheets can be printed out. This arrangement will make it possible to declare exam results without delay (same-day result) and errors.
15. The MCQ program can have additional facility to process marks and results in accordance with gracing rules of institutes.
16. Many of the abovementioned tasks in the present system involve wasteful expense of money, man-hours, stationary, delays and errors, which would be avoided by MCQ examination pattern.
17. MCQ pattern of examination will provide practice to the students for appearing in higher examinations like GRE, TOEFL, IELTS, TSE, FPGEE, NAPLEX, BET and GATE etc.
18. Enhancement of knowledge of students - A question paper of 100 marks in a MCQ Test can be divided in to 100 or 200 MCQs, each of 1 or 0.5 marks. Thus, any micro-detail from any chapter, topic, mechanism or concept can appear in examination and student has to prepare every micro-detail of the subject. Since, there are no optional questions in this examination system all chapters have to be studied. Thus this examination system can enhance knowledge of students in a given subject, even if the syllabus remains same. This fact has been confirmed through our trial tests.
19. Enhancements of knowledge of teachers - Since, micro-details are asked in exams, teachers have to prepare and update their knowledge. Thus this system upgrades and updates the knowledge of teachers in concerned subject.

**Your valuable comments and suggestions, in regard to this computer-based examination system, would be helpful to us in further development of this software.**