

at the examination to be held in the next succeeding year on his foregoing the earlier performance in writing in the courses concerned in case he had previously appeared in the same; but such a candidate will have to intimate to the University his intention of doing so, within one month of the date of publication of the result of Part II examination in which he had originally appeared.

The aforesaid clauses (a) and (b) shall be subject to following conditions :—

- (i) No candidate will be allowed to appear in any course more than twice, including the examination originally held and no candidate will be allowed to appear in any courses beyond four years of his first admission to the M.Com. Course.
  - (ii) A candidate must choose once only the courses of a part in which he would reappear at an examination. No candidate who has once chosen to reappear in certain courses of a Part will be allowed to appear in the remaining courses of that Part at a later examination.
  - (iii) A candidate who opts to reappear in certain courses at an examination, but is not able to appear in the same will not be deemed to have availed himself of the chance to reappear and may reappear in the courses concerned at a later examination, if otherwise eligible.
9. A candidate who at the end of the second year fails to secure the minimum marks required for the award of the degree, may reappear in all such courses of the first and second years in which he had not reappeared twice already, at the examination to be held in the month of April next year, but a candidate must pass the M.Com. Examinations within four years of his admission to M.Com. Course.
10. A candidate who has qualified for the award of the degree may be allowed to reappear at the examination with a view to improving his previous performance. Such a candidate will be allowed to reappear at the examination as an ex-student, once only, within a period of five years of the date of his qualifying in the examination initially. Such a candidate may reappear either in all the courses prescribed for Part I or in all the courses prescribed for Part II or in courses prescribed for both Part I and Part II (either in the same year or in the courses of Part I in one year and in the courses of Part II in the next subsequent year and *vice-versa*) as the case may be. Such candidates will be required to reappear at the examination according to the scheme of examination and the syllabus prescribed for the year in which the examination is currently held.

#### **MASTER OF COMPUTER APPLICATIONS (M.C.A.) EXAMINATION**

1. There shall be a Master of Computer Applications (M.C.A.) Course in the Department of Computer Science under the Faculty of Mathematical Sciences.
2. The duration of the Course shall be three academic years.
3. A student seeking admission to the M.C.A. Course must have passed the Bachelor Degree Examination of the University of Delhi,

or any examination recognised as equivalent thereto of any statutory University in India or abroad, and must possess such other qualifications as specified in the eligibility conditions for M.C.A. including passing of an entrance examination—written and/or practical and/or oral, as may be prescribed by the Academic Council from time to time.

4. No person shall be qualified for admission to the M.C.A. course unless he is 20 years age on or before the 1st October in the year in which he seeks admission. Provided that the Vice-Chancellor may, on the basis of individual merit, relax the age limit up to a maximum period of one year.

*Examination :*

5. There shall be the following six examinations comprised in the course :

*Semester I Examination :*

On completion of the course of study for the period prescribed therein, at the end of the first semester of the course to be held in November/December.

*Semester II Examination :*

On completion of the course of study for the period prescribed therein, at the end of the second semester of the course to be held in April/May.

*Semester III Examination :*

On completion of the course of study for the period prescribed therein, at the end of the third semester, after being promoted to II Yr. to be held in November/December.

*Semester IV Examination :*

On completion of the course of study for the period prescribed therein, at the end of the fourth semester, after having been promoted to II Yr. to be held in April/May.

*Semester V Examination :*

On completion of the course of study for the period prescribed therein, at the end of the fifth semester, after being promoted to III Yr. to be held in November/December.

*Semester VI Examination :*

On completion of the work of study for the period prescribed therein, at the end of sixth semester, after having been promoted to III Yr. to be held in April/May.

6. *Attendance :*

In the case of Part I Examination and Part II Examination, no candidate shall be deemed to have pursued a regular course of study unless he has attended at least three-fourth of the tutorials conducted and the practicals held separately in relation to the course prescribed for each examination.

In the case of Part III Examination, no candidate shall be deemed to have pursued a regular course of study unless he has attended at least three-fourth of the tutorials conducted and the practicals held separately and the Supervisor guiding the candidate for the dissertation work has reported that he is satisfied about the candidate's work on the dissertation during the year as also there is a satisfactory report about his (candidate) project work from the organisation to which he was assigned. Provided that such reports both from the Supervisor and the organization shall be to the satisfaction of the Head of the Department.

7. *Scheme of Examination :*

The following shall be the scheme of examination for the course.

**SEMESTER I**

Papers :	Duration of Hrs.	Maximum Marks		Total
		Semester Exam.	Internal Assessment	
CS 101—Programming Fundamentals and Problem Solving	3	100	50	150
CS 102—Logical Computer Organisa- tion and Assembly Language Programming	3	100	50	150
CS 103—Discrete Structures	3	100	50	150
CS 104—Introduction to Digital Elec- tronics and Microprocessors	3	100	50	150
CS 105—Business Organization and Accounting Principles	3	100	50	150
Semester I—Total		500	250	750

**SEMESTER—II**

Papers :	Duration of Hrs.	Maximum Marks		Total
		Semester Exam.	Internal assessment	
Cs 201—Data Structures and Algorithms	3	100	50	150
CS 202—Introduction to File Processing	3	100	50	150
CS 203—Computer Systems Architecture	3	100	50	150
CS 204—Scientific Compu- tation	3	100	50	150
CS 205—Computer Oriented Statistical Methods	3	100	50	150
Semester II—Total		500	250	750

	Duration of Hrs.	Maximum Marks		Total
		Semester Exam.	Internal assessment	
<b>SEMESTER—III</b>				
Papers :				
CS 301—Database Systems	3	100	50	150
CS 302—Operating Systems	3	100	50	150
CS 303—Theory of Computation-I	3	100	50	150
CS 304—Fundamentals of Computer Algorithms	3	100	50	150
CS 305—System Analysis and MIS	3	100	50	150
CS 306—Digital Laboratory	4	75	75	150
Semester III—Total		575	325	900
<b>SEMESTER—IV</b>				
Papers :				
CS 401—Structure of Programming Languages and Compiler Design	3	100	50	150
CS 402—Modelling and Simulation Techniques	3	100	50	150
CS 403—Computer Oriented Optimization Methods	3	100	50	150
CS 404—Data Communication and Networks	3	100	50	150
CS 405—Software Engineering	3	100	50	150
CS 406—Microprocessor Laboratory	4	75	75	150
Semester IV—Total		575	325	900
<b>SEMESTER—V</b>				
Papers :				
CS 501—Computer Graphics	3	100	50	150
CS 502—Artificial Intelligence	3	100	50	150
Any three of the following :				
CS 503—Performance and Evaluation of DP Systems	3	100	50	150
CS 504—Parallel Computation	3	100	50	150
CS 505—Computer-Centre Management	3	100	50	150

## Appendix II

	Duration of Hrs.	Maximum Marks		
		Semester Exam.	Internal assessment	Total
CS 506—Theory of Computation- II	3	100	50	150
CS 507—Programming Languages	3	100	50	150
CS 508—Database Design and Management	3	100	50	150
CS 509—Decision Support and Expert Systems	3	100	50	150
CS 510—Advanced Operating Systems	3	100	50	150
CS 511—Advanced Compiler Design	3	100	50	150
CS 512—Program Verification	3	100	50	150
CS 513—Pattern Recognition	3	100	50	150
CS 514—Digital Image Processing	3	100	50	150
CS 515—Graph Theory	3	100	50	150
CS 516—Microprocessors/Micro- computers and their appli- cations.	3	100	50	150
Semester V-Total		500	250	750

**SEMESTER—VI**

CS 601—Project

Maximum marks — 750

Grand Total for all Semesters—4800

*Notes :*

- (1) Each theory paper shall be of three hours duration and shall carry 150 marks (100 marks for written semester examination and 50 marks for internal assessment).
- (2) Each practical paper shall be of four hours duration on one day and carry 150 marks (75 marks for semester practical examination and 75 marks for internal assessment).
- (3) Project in the Semester VI examination shall carry 750 marks in the following manner :
  - (a) Dissertation 450 marks
  - (b) Viva-voce 150 marks
  - (c) Interim report 100 marks
  - (d) Internal assessment 50 marks
- (4) In respect of theory papers, 50 marks in each paper shall be reserved for award on internal assessment based on such work as assignments/practical/periodical tests/independent reading etc. to be determined by the Department from time to time. In respect of practical papers, 75