

University of Mumbai
Institute of Distance and Open Learning
Dr. Shankar Dayal Sharma Bhavan, Vidyanagari, Santacruz (E),
Mumbai- 400 098.
Tel :- 022-26543251

**MASTER OF COMPUTER APPLICATIONS (MCA)
ENTRANCE TEST - 2013**

Online (www.mu.ac.in/idol or idol.mahaonline.gov.in) applications are invited for admission to MCA course through Distance and Open Learning mode. Course duration is of Three Years (Six Semesters).

Schedule of activities for M.C.A. Entrance Test – 2013		
ACTIVITIES	FIRST DATE	LAST DATE
Online submission of the M.C.A. Entrance Test - 2013 through computer connected to Internet on the web site idol.mahaonline.gov.in	24 th May, 2013	5 th June, 2013 upto midnight
Date of the Entrance Test	16th June, 2013	
Venue of Entrance Test will be displayed on website www.mu.ac.in/idol on 12/06/2013		

Eligibility:- Graduate in any faculty of a recognized University with minimum 45% marks (minimum 40% for reserved category) and Mathematics as a subject at XII or higher level. *Those Students who have appeared for final year and whose results are awaited are eligible for appearing at the Entrance Test.*

Admissions to MCA will be on the basis of Entrance Test to be held **on Sunday 16th June, 2013 between 11.00 a.m. and 1.00 p.m.**

Students can submit their form online (www.mu.ac.in/idol or idol.mahaonline.gov.in) from 24th May 2013 to 5th June, 2013. Entrance examination fees of Rs. 500/- should be paid through bank challan of Bank of Maharashtra or through Credit/Debit Card by Payment Gateway. This fee is non-refundable and non transferable under any circumstances.

The percentage of seats reserved for candidates of backward class categories belonging to Maharashtra State are as per the details shown in table below.

Backward class candidates shall claim the category to which they belong at the time of submission of application form for Admission. These are the minimum percentages of reservation exclusive of the backward class candidates securing allotment through General Merit.

The following is the reservation:-

- | | | |
|---------------------------|---|---|
| 1) SC | : | 13% Seats |
| 2) ST | : | 7% Seats |
| 3) DT(A) | : | 3% Seats |
| 4) NT(B) | : | 2.5% Seats |
| 5) NT(C) | : | 3.5% Seats |
| 6) NT(D) | : | 2% Seats |
| 7) OBC/ SBC | : | 19% Seats |
| 8) Physically Handicapped | : | 3% Seats |
| 9) Others | : | 3% Seats (Transferred Govt. employees wards etc...) |

Verification of all eligibility criteria documents including caste certificates of only those candidates who qualify for the Entrance test will be done at the time of admissions.

All the candidates claiming the reservation for backward classes should submit **“Caste certificate”** in the name of the **candidate** issued by the **Executive Magistrate or Competent Authority in Maharashtra State clearly mentioning the Category of the candidate and also the remark that the caste is recognized as backward class category belonging to the State of Maharashtra** at **the time of online submission** of application form for the Admission to MCA course.

The candidates belonging to SC, VJ/DT(A), NT(B), NT(C), NT(D), OBC /SBC categories should produce **“Caste Validity Certificate”** issued by Scrutiny Committee of Social Welfare Department and the Candidate belonging to ST category should submit **“Tribe Validity Certificate”** issued by Scrutiny Committee of Tribal Department at **the time of online submission** of application form for the Admission. The policy of Social Justice & Special Assistance Department and Tribal Development Department of state Government will be made applicable in case of Caste/Tribe Validity Certificate.

The candidates belonging to VJ/DT (A), NT(B), NT(C), NT(D), OBC /SBC categories should produce **“Non Creamy layer Certificate”** issued by Sub Divisional Officer/Deputy Collector of the district in addition to the caste certificate at **the time of online submission** of application form for the Admission. The **“Non Creamy layer Certificate” should be valid upto 31st March, 2014. If these candidates are not able to produce the Non Creamy layer certificate at the time of online submission of application form for the Admission, then such candidates will be treated as GENERAL category candidates and such candidates will not be able to claim on reserved seats in the admission process.**

For women 30% (horizontal) reservation.

Application of candidates who submits wrong / incorrect information / documents / certificates will be summarily rejected after verification at the time of admission.

Syllabus for Entrance Test is available on our website www.mu.ac.in/idol

Sd/-
Dr. D. Harichandan
Professor-cum-Director
IDOL

Date: 24th May, 2013

MCA (IDOL) ENTRANCE TEST – 2013

1) Eligibility

Min. Qualification: Graduate in any faculty of a statutory University with minimum 45% marks (minimum 40% for reserved category) and Mathematics at XII or higher level. There will be an aptitude test for the admission in MCA course. (Aptitude test will have 100 questions of two hours duration)

Admissions are open to citizens of India residing in India only. NRI & Foreign students whether residing in India or abroad are not eligible.

The students who have appeared for final year and whose results are awaited are eligible for Entrance Test only.

2) MCA Admissions will be done on the basis of Entrance Test only. Students can submit their form online (www.mu.ac.in/idol or idol.mahaonline.gov.in) from 24th May 2013 to 5th June, 2013. Entrance examination fees of Rs. 500/- should be paid through bank challan of Bank of Maharashtra or through Credit/Debit Card by Payment Gateway. This fee is non-refundable and non transferable under any circumstances.

3) Demand Draft of Rs.500/-towards entrance exam fee in favour of “Institute of Distance Open Learning (IDOL), University of Mumbai” payable at Mumbai only.

4) **Date of Examination:- 16th June, 2013**

Time :- 11.00 a.m. to 1.00 p.m.

MCA (MASTER OF COMPUTER APPLICATIONS)

MCA (Master of Computer Applications) is a six semesters (Three Years) Masters degree program University of Mumbai has been started from the academic year 1992 & started through Institute of Distance Education from 2005-2006. The course is designed to provide comprehensive knowledge of computer science, with emphasis on applications. It has courses in computer science, mathematical science and management. The 6th Semester is dedicated to the project work, to be done in the industry. Since the courses are pertaining to modern technology, the response from students is overwhelming.

Admissions are open to citizens of India residing in India only. NRI & Foreign students whether residing in India or abroad are not eligible.

Duration

The duration of the M.C.A. course extends over six semesters (Three Years), spreading up equally over three academic years. Each semester is of 12 -16 weeks duration, besides the time spent for examinations.

Course Structure

The duration of the MCA (Master of Computer Application) course extends over six semesters, spreading up equally over three academic years. Each semester is of 12-16 week duration besides the time spent for examinations. The course is designed to provide comprehensive knowledge of computer science. It has courses in computer science and mathematics and management. During sixth semester student will have to undergo a project work which is equivalent to two theory papers. Semester wise subjects and practical have been defined in the course structures.

Syllabus details & sample question paper of MCA Entrance Examinations Scheme of entrance examination

The MCA ENTRANCE 2013 examination comprises of one paper (objective type) of 120 minutes duration without negative marking.

Syllabus

The questions in this paper will cover: logical reasoning, quantitative reasoning, high school mathematics, vocabulary, English comprehension and verbal ability.

General Aptitude:

The main objective of this section is to assess the general aptitude of the candidate to pursue a computer applications and software profession.

Algebra :

Fundamental operations in Algebra, Expansion, factorization, Quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations.

Probability and Statistics:

Basic concepts of probability theory, Averages, frequency distributions, and measures of dispersions and skewness Binomial, Poisson, normal distributions, curve fitting, and principle of least squares, correlation and regression.

Arithmetic:

Ratios and proportions, problems on time-work, distance-speed, percentage.

Basic Set Theory and Functions:

Set, relations and mappings.

Mensuration:

areas, triangles and quadrilaterals, area and circumference of circles, volumes and surface areas of simple solids such as cubes, spheres, cylinders and cones.

Computer Basics :

Organization of a computer, Central Processing Unit (CPU), Structure of instructions in CPU, input / output devices, computer memory, memory organization, back-up devices.

Data Representation:

Representation of characters, integers, and fractions, binary and hexadecimal representations, Binary Arithmetic: Addition, subtraction, division, multiplication.

Computer Architecture:

Block structure of computers, communication between processor and I / O devices, interrupts.

Computer Language:

Assembly language and high level language, Multiprogramming and time sharing operating systems, Computer Programming in C.

Operating System basics:

Multiprogramming and timesharing operating systems.

Programming in C :

Data types, Control Structures, Arrays, functions, pointers.

Database Management Systems:

Data Models, Structured Query Language, E-R Diagrams, Normalization, primary key foreign key, RDBMS

Sample Questions

1. Remote computing services involve the use of timesharing and _____
 - a) Multiprocessing
 - b) Interactive processing
 - c) Batch processing
 - d) Real time processing

2. Which of the following is not a part of the operating system
 - a) Supervisor
 - b) Job-control program
 - c) Performance monitor
 - d) Input/ output program

3. Which of the following will determine your choice of systems software for your computer?
 - a) Is the applications software you want to use compatible with it?
 - b) Is it expensive?
 - c) Is it compatible with your hardware?
 - d) (a) and (c)

4. A six faced die is so biased that it is twice as likely to show an even number as an odd number when thrown. It is thrown twice. what is the probability that the sum of the two numbers thrown is even
 - a) $\frac{5}{9}$
 - b) $\frac{9}{5}$
 - c) $\frac{14}{9}$
 - d) $\frac{4}{9}$

5. A bag contains 6 white and 4 black balls one of the bag is chosen as random and a draw of 2 balls is made from it. find the probability that one is white and the other is black
 - a) $\frac{84}{165}$
 - b) $\frac{165}{84}$
 - c) $\frac{42}{75}$
 - d) none of the above

6. In order to use DBMS, It is important to understand
- The physical schema
 - All sub schema that system supports
 - one subschema
 - Both (a) and (b)
7. In SQL which command(s) is (are) used to enable/ disable a database trigger?
- MODIFY USER
 - CHANGE USER
 - ALTER USER
 - NONE OF ABOVE
 - ALL OF ABOVE
8. Who developed the E-R Model?
- Codd
 - Date
 - Chen
 - Bachman
9. What are the components of an E-R Model?
- Entities.
 - Attributes
 - Relationships
 - All of the above
10. Let the sets A, B, C and U be as U = all students at a university, A = day students, B = mathematics major, C = graduate students. Let $\#U = 16,000$; $\#A = 9,000$; $\#B = 300$ and $\#C = 1,000$. Also assume that the number of day students who are majors is 250, 50 out of which are graduate students, and that total number of day graduate students is 700. Determine the number of students who are :
- evening students
 - non-mathematical majors
 - undergraduates(day or evening)
 - day graduate non-mathematics majors.
 - Evening graduate students
 - Evening graduate mathematics majors
 - Evening undergraduate non-mathematics majors.

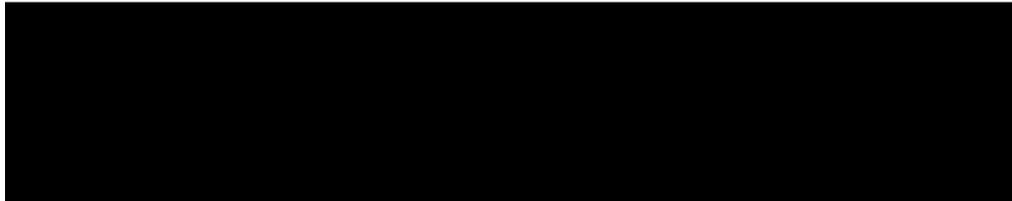
11. Which of the following is false?

- a) Data stored in an array can be accessed faster than data stored in a disk file.
- b) Data stored in an array needs to be entered only once, typically at the beginning of the program.
- c) Array allows the programmer to store information in the computer's internal memory.
- d) When using arrays, you will have fewer variable names to remember.
- e) None of the preceding statements are false.

12. Elements in an array are identified by a unique _____

- a) Data type
- b) Order
- c) Subscript
- d) Symbol

13.

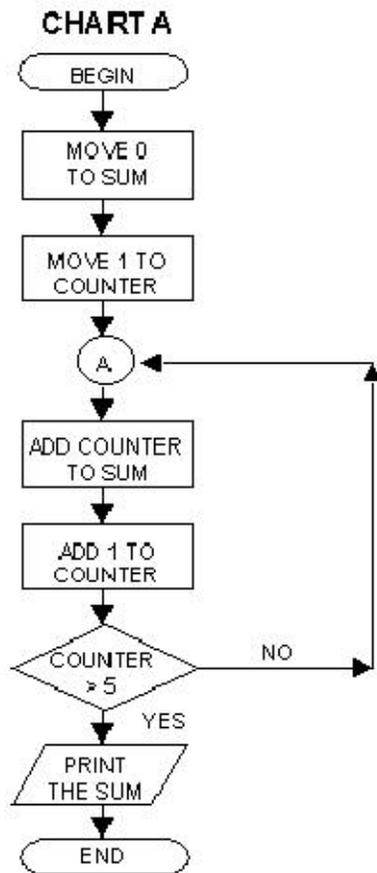


Which of the following alphabetical input sequences will minimize the data stored by the program?

- 1) Class Within Department Within Division
- 2) Division Within Department Within Class
- 3) Employee Within Department Within Division
- 4) Employee Within Class Within Division



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What will be printed at the end of this routine?

1) 15

2) 10



Consider the following pseudo-code:

```
read a record
do until there are no more records
  if ACCOUNT-TYPE is BUSINESS
    [REDACTED]
  else
    set DISCOUNT-RATE to zero
  endif
  calculate DISCOUNT-AMOUNT = TOTAL-AMOUNT x DISCOUNT-RATE
  calculate AMOUNT-DUE = TOTAL-AMOUNT - DISCOUNT-AMOUNT
  print TOTAL-AMOUNT, DISCOUNT-AMOUNT, AMOUNT-DUE
  read a record
enddo
```

Given the following values for a record:

```
ACCOUNT-TYPE = BUSINESS
ORDER-AMOUNT = 900
TOTAL-AMOUNT = 4000
```

What values will be printed for TOTAL-AMOUNT, DISCOUNT-AMOUNT and AMOUNT-DUE?

	TOTAL-AMOUNT	DISCOUNT-AMOUNT	AMOUNT-DUE
1)	4000	0	4000
2)	4000	200	3800
3)	4000	400	3600
4)	4000	1000	3000



16. Richard is a terrible driver. He has had at least five traffic violations in the past year. Which of the following can be said about the above claim?

(A) This is an example of an argument that is directed against the source of the claim rather than the claim itself.

(B) The statement is fallacious because it contains an illegitimate appeal to authority.

(C) The above argument obtains its strength from a similarity of two compared situations.

(D) The argument is built upon an assumption that is not stated but rather is concealed.

(E) In the above statement; there is a shifting in the meaning of terms; causing a fallacy of ambiguity.

Analysis of the sentences indicates the presence of an assumption that anyone who has had at least five traffic violations in a year is a terrible driver. This assumption is understood but is not stated. Rather, it is a hidden assumption, making (D) the appropriate answer. Alternative(A)is incorrect because there is on attack on the source of the claim.(B)is wrong because there is no appeal to authority _illegitimate or not.(C)is not the correct answer because there is no comparison of two similar situations in the statement.(E)is incorrect because there is no term with a confusing or double meaning.

17 What is the missing number?

$$20 / 0.8 = ?$$

18 Which is the largest fraction?

$$3/4 \quad 7/8 \quad 4/5 \quad 7/9 \quad 7/10$$

19. What is the missing number in the following series?

$$45/9 = 12 - ?$$

$$256 ? 64 \quad 32 \quad 16$$

$$3 \quad 9 \quad 27 ? 243$$

$$1 \quad 4 \quad 10 \quad 19 ?$$

20. The exchange rate is the ruling official rate of exchange of dollars for other currencies. It determines the value of American goods in relation to foreign goods. If the dollar is devalued in terms of other currencies, American exports (Which are paid for in dollar) become cheaper to foreigners and American imports (paid for by purchasing foreign currency) became more expensive to holders of dollars. What conclusion can be drawn from the above?

- (A) There are certain disadvantages for the United states economy attached to devaluation.
- (B) The prospect of devaluation results in a speculation outflow of funds.
- (C) By encouraging exports and discouraging imports, devaluation can improve the American balance of payments.
- (D) The difference between imports is called the Trade Gap.
- (E) It is possible that inflation neutralizes the beneficial effects of devaluation.

The best conclusion that can be drawn from the statements is one that sums up the facts\ that are given in one sentence; thus, (C) is the best answer. Although the given paragraph states that if there is devaluation of the dollar, American import will become more expensive, this will not necessarily be a disadvantage for the U.S. economy hence, (A) is not appropriate. Alternative (B) is also inappropriate, because it highlights a disadvantage that may arise from the expectation of devaluation, bat which is not dealt with in the paragraph. Alternatives and (E) are both helpful pieces of information, but they cannot be concluded from the given text.