

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

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**MASTER OF COMPUTER APPLICATIONS ( MCA)**  
**ENTRANCE TEST – 2012**

Applications are invited for admission to MCA course through Distance and Open Learning mode. Course duration is of Three Years (Six Semesters).

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

Admissions to MCA will be on the basis of Entrance Test to be held **on Sunday 1st July, 2012 between 11.00 a.m. and 1.00 p.m.**

Application forms is available on our website [www.mu.ac.in/idol](http://www.mu.ac.in/idol) from 1st June to 20<sup>th</sup> June 2012 which can be downloaded and be submitted in person at Room No.12 I.T. Section, Institute of Distance and Open Learning (IDOL), University of Mumbai, Dr. Shankar Dayal Sharma Bhavan, Vidyanagari, Santacruz (East), Mumbai - 400 098, from 11.00 a.m. to 02.30 p.m. (on working days) along with Demand Draft/Pay Order of **Rs. 500/** towards Entrance examination fee in favour of **Prof.-cum-Director, IDOL, University of Mumbai**, payable at Mumbai only. 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                    | : | 19% Seats   |
| 8) SBC                    | : | 2% Seats  |
| 9) Physically Handicapped | : | 3% Seats  |
| 10) Others                | : | 3% Seats (Transferred Govt. employees wards etc...) |

All the candidates claiming the reservation for backward classes should submit **“Caste certificate”** in the name of the **candidate** issued by the **Executive Magistrate/Metropolitan Magistrate 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 submission** of application form for the Admission to MCA course.

The candidates belonging to SC, VJ/DT (NT(A)), NT(B), NT(C), NT(D), OBC and 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 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 (NT(A)), NT(B), NT(C), NT(D), OBC and 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 submission** of application form for the Admission. The **“Non Creamy layer Certificate”** should be valid upto **31st March, 2013**. **If these candidates are not able to produce the Non Creamy layer certificate at the time of 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.

Syllabus for Entrance Test is available on our website [www.mu.ac.in/idol](http://www.mu.ac.in/idol)

Date: 1st June, 2012

Dr. D. Harichandan  
Professor-cum-Director

Seat No.				
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**University of Mumbai  
Institute of Distance and Open Learning**

<b>Affix Latest Passport size Photograph</b>
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**ENTRANCE TEST FOR  
MASTER OF COMPUTER APPLICATIONS (M.C.A.)  
APPLICATION FORM  
YEAR - 2012**

**1. NAME (In Capital Letters):**

-----  
 (SURNAME)    (OWN NAME)    (FATHER'S/ HUSBAND'S)  
 -----  
 MOTHER'S NAME

**2. ADDRESS:**

-----  
 -----Pin Code : -----

**3. CONTACT PHONE NO.**

Res.Phone : -----                      Mobile No : -----  
 e-mail : -----

**4. EDUCATIONAL QUALIFICATION (Attach Photo copy of Graduation Marksheet)**

Sr. No.	Name of the Examination	University/ Board	Grade	Percentage	For students Who have appeared the final year *
1.					

\* (ENCLOSE HALL TICKET PHOTO COPY SELF ATTESTED)

**5. WHETHER OFFERED MATHEMATICS AS ONE OF THE SUBJECT AT :**

H.S.C.	First Year	Second Year	Graduation

**6. TECHNICAL QUALIFICATION (i.e. related with IT / Computer, if any)**

Sr. No.	Name of the Course	Institute	Remarks

**7. DETAILS OF ENTRANCE EXAMINATION FEES (Amount by DD/ Pay order of Rs. 500/-)**

Mark in appropriate Box  Enclose self attested photocopy of the caste certificate with validity and non creamy layer certificate

SC  ST  VJ/DT i.e. NT(A)  NT (B)  NT(C)  NT (D)  OBC  SBC

P.H.  Others  Open

**Details of fees:-**

DD./ Pay order NO. : -----                      Date : -----

Name of the Bank & Branch: -----

The above information is correct. If it is found that the above information is incorrect or incomplete, my result of the admission to Entrance Test will be treated as cancelled.

-----  
**Candidate's Signature**

Seat No.				
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**University of Mumbai**  
**Institute of Distance and Open Learning**

ENTRANCE TEST – 2012 FOR  
MASTER OF COMPUTER APPLICATIONS (M.C.A.)

**Affix**  
**Latest**  
**Passport**  
**size**  
**Photograph**

**HALL TICKET**

**NAME** (In Capital Letters):

-----  
(SURNAME)

(OWN NAME)

(FATHER'S/ HUSBAND'S NAME)

-----  
MOTHER'S NAME

DATE OF SUBMISSION OF ENTRANCE TEST FORM : -----

**CENTRE :** **Institute of Distance and Open Learning**  
**Dr. Shankar Dayal Sharma Bhavan,**  
**University of Mumbai, Santacruz (East),**  
**Mumbai – 400 098.**

**DATE :** 1st July, 2012

**TIME :** 11.00 a.m. to 01.00 p.m.

-----  
Signature of Candidate

-----  
Professor -cum- Director

- PS :**
1. No separate correspondence will be made by the Institute for hall tickets etc.
  2. Students are requested to be present half an hour before commencement of the Test.
  3. Result will be declared on our website [www.mu.ac.in/idol](http://www.mu.ac.in/idol) within 15 days.

University of  
Mumbai (IDOL)  
Sr. No. -----

ALL THREE PARTS TO BE FILLED BY THE CANDIDATE  
Account-cum-Receipt Form MCA ENTRANCE TEST -2012  
Part (A) To be returned to the A/C Section of the Institute

Form No. \_\_\_\_\_

Candidate's Name ( Surname First ) -----  
Residential Address -----

Course MCA Entrance Test 2012 Fees by Demand Draft /Pay order  
No. ----- Date ----- ----- Rs. 500/- (Rupees Five Hundred Only)  
Name of Bank : ----- Branch -----  
Date : -----

Seal

Signature of the Admission Clerk IDOL

University of  
Mumbai (IDOL)  
Sr. No. -----

ALL THREE PARTS TO BE FILLED BY THE CANDIDATE  
Account-cum-Receipt Form MCA ENTRANCE TEST -2012  
Part (B) For the use of Admission Section

Form No. \_\_\_\_\_

Candidate's Name ( Surname First ) -----  
Residential Address -----

Course MCA Entrance Test 2012 Fees by Demand Draft  
No. ----- Date ----- ----- Rs. 500/- (Rupees Five Hundred Only)  
Name of Bank : ----- Branch -----  
Date : -----

Seal

Signature of the Admission Clerk IDOL

ALL THREE PARTS TO BE FILLED BY THE CANDIDATE

Account-cum-Receipt Form MCA ENTRANCE TEST -2012  
Part (C) For the Student

University of  
Mumbai (IDOL)  
Sr. No. -----

Form No. \_\_\_\_\_

Candidate's Name ( Surname First ) -----  
Residential Address -----

Course MCA Entrance Test 2012 Fees by Demand Draft  
No. ----- Date ----- -----Rs. 500/- (Rupees Five Hundred Only)  
Name of Bank : ----- Branch -----  
Date : -----

Seal

Signature of the Admission Clerk IDOL

# **MCA (IDOL) ENTRANCE TEST – 2012**

## **MCA (IDOL) ENTRANCE TEST & ADMISSION -2012**

### **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. Entrance Test Application forms will be available on our **website [www.mu.ac.in/idol](http://www.mu.ac.in/idol)** from **01st June to 20<sup>th</sup> June, 2012**, which should be downloaded and be submitted in person at Room No. 12 (IT Section) Institute of Distance and Open Learning , Dr. Shankar Dayal Sharma Bhavan, Vidyanagri, Mumbai – 400 098, **from 11.00 a.m. to 2.30 p.m.**

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:-** 01<sup>st</sup> July, 2012

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

**Place :-** University Campus, Vidyanagari, Mumbai – 400 098.

## **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 2012 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.

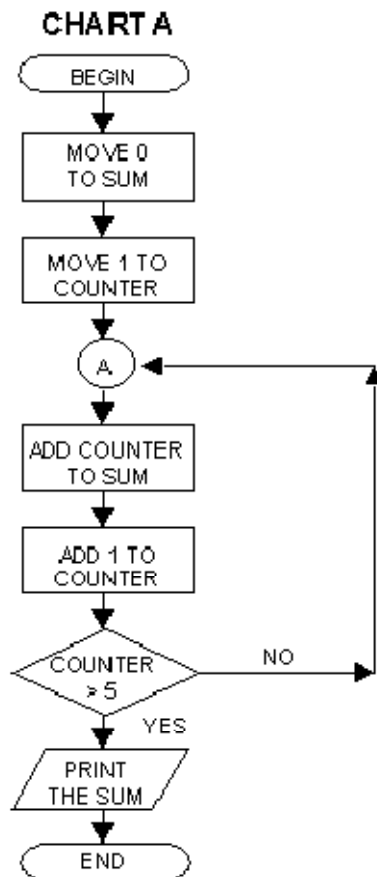
A payroll report is produced for each pay period that shows:

- the amount paid by each department for each of three classes of employees
- the amount paid by each division for each of its departments
- the total payroll for each division of the company

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

14



What will be printed at the end of this routine?

- 1) 15
- 2) 10
- 3) 6
- 4) 5

Consider the following pseudo-code:

```
read a record
do until there are no more records
  if ACCOUNT-TYPE is BUSINESS
    if ORDER-AMOUNT is greater than 1000
      set DISCOUNT-RATE to 10 percent
    else
      set DISCOUNT-RATE to 5 percent
    endif
  else
    set DISCOUNT-RATE to zero
  endif
  calculate DISCOUNT-AMOUNT = TOTAL-AMOUNT × 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?

	<b>TOTAL-AMOUNT</b>	<b>DISCOUNT-AMOUNT</b>	<b>AMOUNT-DUE</b>
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?

$$45/9 = 12 - ?$$

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

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

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

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.