MCA (DISTANCE) ENTRANCE TEST – 2007

Syllabus details & sample question paper of MCA Entrance Examinations

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.

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

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.

2) MCA Admissions will be done on the basis of Entrance Test only. Entrance Test forms

are available on our **website www.mu.ac.in from 16th July to 27th July,2007.Entrance Test will be held on Sunday,29th July,2007 from 11.00 a.m. to 1.00 p.m. at IDE.**

3) Entrance Test Forms can be download from our website & submit in person at above address alongwith **Demand Draft of Rs.500/-towards entrance exam fee in favour of 'Institute of Distance Education, University of Mumbai' payable at Mumbai only.**

4) **Timings :-** 11.00 a.m. to 2.30 p.m. from Monday to Friday (Except Public Holidays)

MCA (MASTER OF COMPUTER APPLICATIONS)

MCA (Master of Computer Applications) is a six semesters (Three Years) Master's 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 week's duration, besides the time spent for examinations.

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

Entrance Examination

The admission to the course is given through the Entrance Examination conducted by the University of Mumbai, Institute of Distance Education every year at various lDE. The entrance examination for admission to the M.C.A. Course consists of a written test of 100 Marks (Two Hours). The paper is prepared to test mental, logical and analytical abilities of students.

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 courses. Semester wise subjects and practical have been defined in the course structures.

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Scheme of entrance examination

The MCA ENTRANCE 2007 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 skew ness 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.

Menstruation: 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) 5/9

b) 9/5
c) 14/9
d) 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) 84/165

b) 165/84
c) 42/ 75
d) none of the above

6. In order to use DBMS, It is important to understand

a) The physical schema

b) All sub schema that system supports

c) one subschema
d) Both (a) and (b)

7. In SQL which command(s) is (are) used to enable/ disable a database trigger?

a) MODIFY USER

b) CHANGE USER
c) ALTER USER
d) NONE OF ABOVE
e) ALL OF ABOVE

8. Who developed the E-R Model?

a) Codd
b) Date
c) Chen
d) Bachman

9. What are the components of an E-R Model?

a) Entities.
b) Attributes
c) Relationships
d) 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 tne 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 :

a) evening students

b) non-mathematical majors
c) undergraduates(day or evening)
d) day graduate non-mathematics majors.
e) Evening graduate students
f) Evening graduate mathematics majors
g) Evening undergraduate non-mathematics majors.

11. Which of the following is false?

a) Data stored in an array can be accessed faster that 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 computers internal memory.
d) When using arrays, you will have fewer variables names to remember. e) None of the proceeding statements are false.

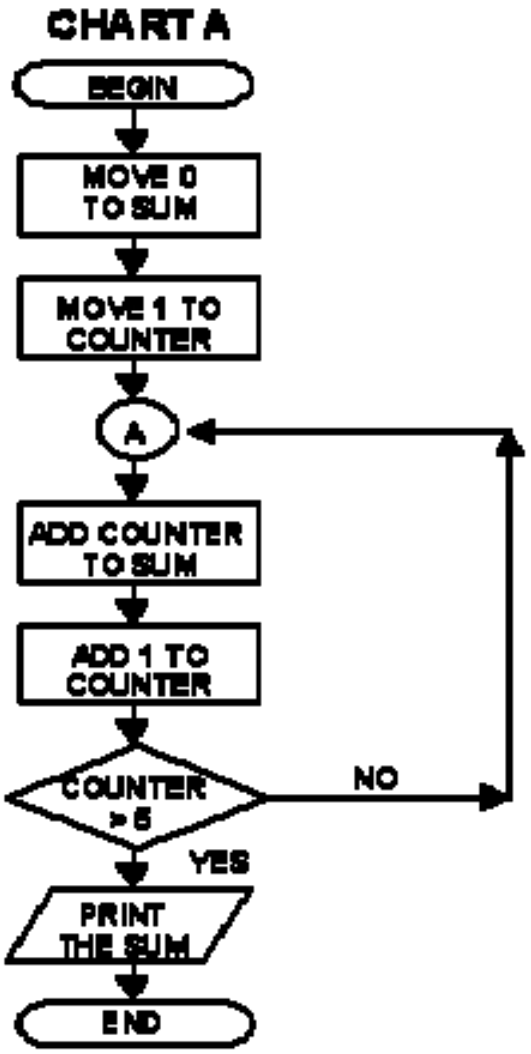
12. Elements in an array are identified by a unique

_____

a) Data type

b) Order
c) Subscript
d) Symbol

13.



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 x DISCOUNT-RATE
    calculate AMOUNT-DUE = TOTAL-AMOUNT – DISCOUNT-AMOUNT
    print TOTAL-AMOUNT, DISCOUNT-AMOUNT, AMOUNT-DUE
    read a record
endido
```

Given the following values for a record:

ACCOUNT-TYPE = BUSINESS
ORDER-AMOUNT = 800
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. 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.

18 What is the missing number?

20 / 0.8 = ?

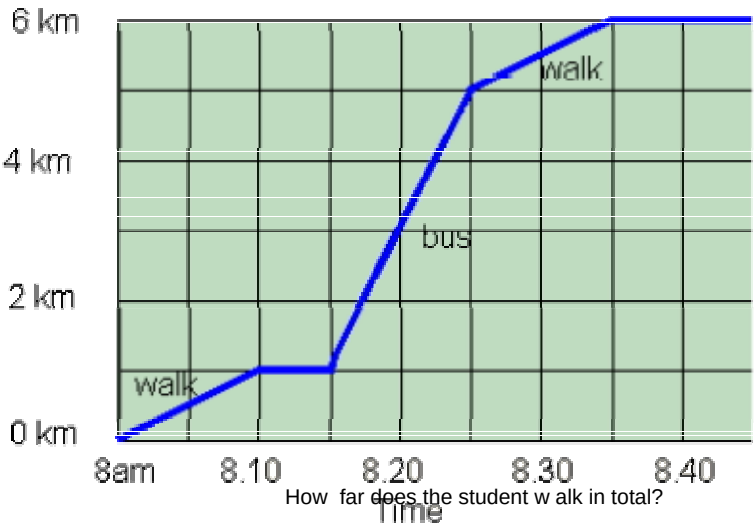
19 Which is the largest fraction?
3/4 7/8 4/5 7/9 7/10
. 20 What is the missing number in the following series?

45/9 = 12 - ?

256 ? 64 32 16

3 9 27 ? 243
1 4 10 19 ?

21



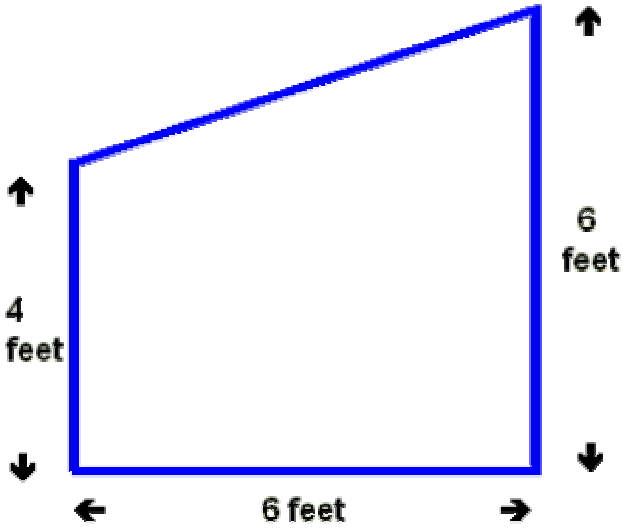
A student walks to the bus stop to catch a bus to the university. He then walks from the bus stop at the university to the students union arriving there at 8.35 am.

How far does the student w alk in total?

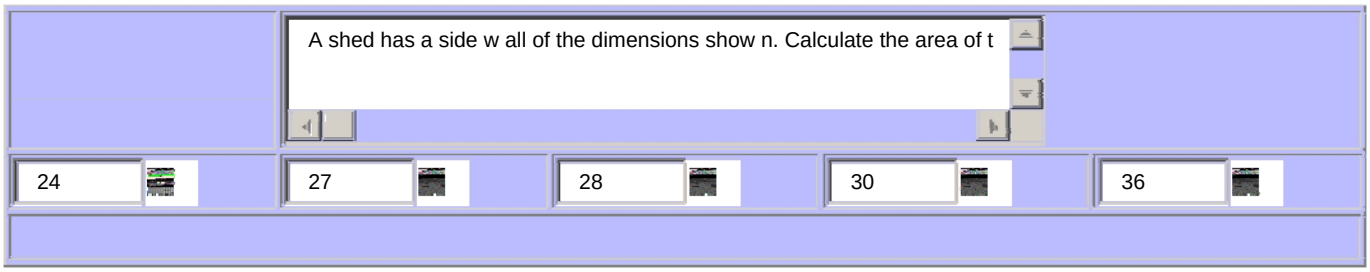
a) How far is he from the university students' union at 8.20 am?

b) What is the average speed of the bus?

22



A shed has a side wall of the dimensions shown. Calculate the area of the wall in square feet.



23) A car left Pune at 7.12 am and arrived in kalina, 180 miles distant at 10.57 am. What was its average speed in miles per hour?

24) An aircraft flies 930 miles in 75 minutes. How many miles does it fly in 4 hours 45 minutes assuming a constant speed?

25) You get a wage increase of 4% plus an extra Rs. 5 per week. Your present wages are Rs.250 per week. What will your new wage be?

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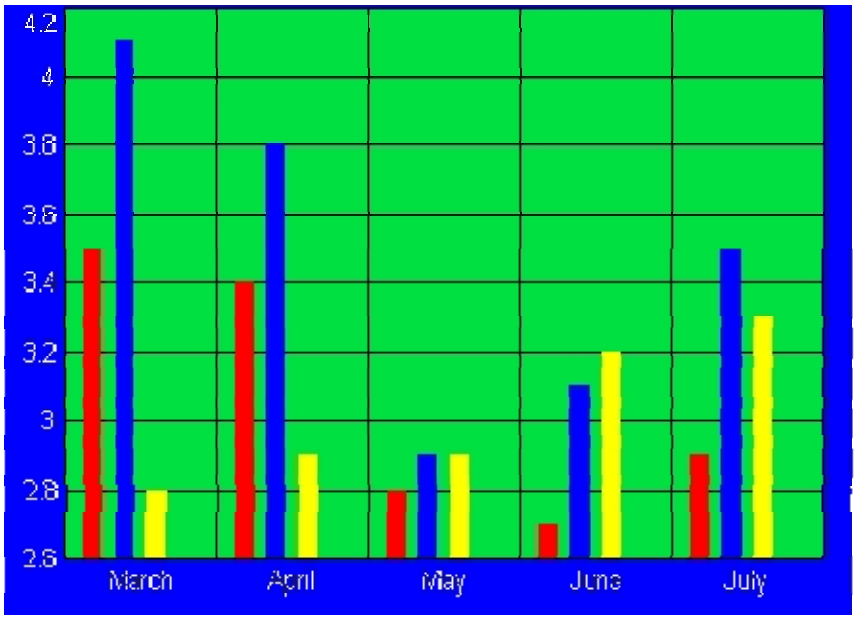
26) A cube has a volume of 8 cubic meters. If each side is doubled in length what will its new volume be in cubic meters?

27) A driver drives 8 km South then 6 km W. and 2 km S. again. She then drives 3 km E. to avoid a traffic jam before driving 6 km N. How many kilometers is she from her starting point?

585 | 592 | Can't Say

9) In 2004 how many social science students were in employment after graduating?



The graph to the left gives the number of computers sold each month (in thousands) by three different computer manufacturers. Manufacturer 1 (in red), Manufacturer 2 (in blue) and Manufacturer 3 (in yellow).

Which month show ed the largest total decrease in PC sales over the pre

March | April | May | June | July

a) What percentage of Manufacturer 2's sales was made in April (to the nearest percent)?

b) If the average profit made on each PC sold by Manufacturer 3 over all 5 months was £78 what was the total profit on all sales in this period by that manufacturer?