Total No. of Questions : 12]

SEAT No. :

P1763

[Total No. of Pages : 2

[4761]-11
F.Y. M.C.A. (Engg.)
PROBLEM SOLVING AND PROGRAMMING IN C
(2008 Pattern) (Semester-I) (510901)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer 3 questions from section-I and 3 questions from section-II***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Define the term flow chart. Draw all the symbols used in flow chart. **[6]**

b) Devise an algorithm to convert given decimal number to its binary. **[6]**

OR

Q2) a) Write an algorithm to test whether the given number is prime or not. **[6]**

b) Explain: Complexity of algorithm with example. **[6]**

Q3) a) Define a concept of function. Explain function prototype. **[6]**

b) Write C program to find smallest number from the given n numbers without using array. **[6]**

OR

Q4) a) Write syntax of all control structures of C. **[6]**

b) Write a program to print first three perfect numbers from 1 to 100. **[6]**

Q5) a) What is array? Explain with example 2/3 dimension arrays. **[6]**

b) Write a C program to check whether given string is palindrome or not. **[5]**

OR

P.T.O.

Q6) a) List out any six string library function. **[6]**

b) Write C program to add two matrices. **[5]**

SECTION-II

Q7) a) Write a short note on following with suitable example. **[6]**

i) Static Variable.

ii) Pointer to pointer.

b) Write a user defined C function (using pointer Parameter) for strcpy( ) function. **[6]**

OR

Q8) a) Explain any two library functions for dynamic memory allocation with example. **[5]**

b) Write a C program to sort given array of string using pointer notation. **[7]**

Q9) a) What are differences between array & structures? **[6]**

b) What is the use of typedef? Explain with example. **[6]**

OR

Q10)a) Explain structure and its applications. **[6]**

b) Write a simple database program that will store a student's details such as rollno, name, date of birth, address and display it in well format. **[6]**

Q11)a) Write a program to read the contents of text file & display no. of words and characters in the file. **[6]**

b) Explain command line arguments with example. **[5]**

OR

Q12)a) List and explain various modes used to open a file. **[6]**

b) Write short notes on i/o functions of C. **[5]**

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Total No. of Questions : 12]

SEAT No. :

P1764

[Total No. of Pages :5

[4761] - 12

Fist Year M.C.A. (Under Engineering Faculty)

DISCRETE MATHEMATICS

(2008 Course) (Semester - I) (510902)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of probability table, electronic pocket calculator is allowed.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Among the integers 1 to 300, find how many are not divisible by 3, nor by 5. Find also, how many are divisible by 3, but not by 7? **[4]**

b) Prove by mathematical induction that $8^n - 3^n$ is a multiple of 5 for $n \geq 1$. **[4]**

c) Prove the following by using Venn diagram: **[4]**

i) $(A - B) - C = A - (B \cup C)$

ii) $(A \cap B) - C = (A - C) \cap (B - C)$

OR

Q2) a) Let $A = \{\phi, a\}$. Construct the following sets. **[4]**

i) $A - \phi$

ii) $\{\phi\} - A$

iii) $A \cup P(A)$

iv) $A \cap P(A)$

b) It is known that in university 60% of professor play tennis, 50% of them play bridge, 70% jog, 20% play tennis and bridge, 40% play bridge and jog and 30% play tennis and jog. If someone claimed that 20% professors jog and play tennis and bridge, would you believe his claim? Why? **[4]**

c) Show that $2^n > n^3$ for $n \geq 10$. **[4]**

P.T.O.

Q3) a) Prove that $p \rightarrow (q \rightarrow r)$ and $(p \wedge \sim r) \rightarrow \sim q$ are logically equivalent. **[4]**

b) Obtain the disjunctive normal forms for the following without using truth table. **[4]**

i) $(p \rightarrow q) \wedge (q \rightarrow p)$

ii) $((p \wedge (p \rightarrow q)) \rightarrow q)$.

c) Write the following statements in symbolic form using quantifiers. **[4]**

i) Some students are intelligent, but not hardworking.

ii) If x is even, then x is not divisible by 5.

iii) Each integer is either even or odd.

iv) All students have taken a course in communication skills.

OR

Q4) a) Negate each of the following in such way so that a symbol ~ does not appear befor a quantifier. **[4]**

i) $\exists x \forall y[x > y]$

ii) $\forall y \exists x[x^2 = y]$

iii) $\forall x \forall y[(y > 0) \rightarrow (x.y > 0)]$

iv) $\forall x[x^2 > 0]$

b) Determine whether the following is a Tautology, Contingency or Contradiction. **[4]**

i) $(p \rightarrow q) \leftrightarrow (q \vee \sim p)$

ii) $(p \wedge (\sim p \vee q)) \wedge \sim q$

c) Translate into symbolic form and test the validity of the following argument: **[4]**

If 6 is even, then 2 does not divide 7. Either 5 is not prime or 2 divides 7. But 5 is prime Therefore 6 is not even.

Q5) a) A bit is either 0 or 1: a byte is a sequence of 8 bits. Find **[5]**

i) the number of bytes that can be formed from 8 bits.

ii) the number of bytes that begin with 11 and end with 11.

iii) the number of bytes that begin with 11 and do not end with 11.

iv) the number of bytes that begin with 11 or end with 11.

b) From 12 mathematicians and 9 physicists, a committee of 8 is to be formed including two physicists. In how many ways can the committee be chosen so as to give majority of mathematicians? **[6]**

i) 2 physicists and 6 mathematicians.

ii) 3 physicists and 5 mathematicians.

OR

Q6) a) In how many ways can the letters of the word MONDAY be arranged? How many of them begin with M & end with Y? How many of them do not begin with M but end with Y? **[5]**

b) In a class of 11 students, what is the number of ways to select a committee of 5 students? Also find the number of ways if **[6]**

i) Class representative should always be included.

ii) Last ranker should always be excluded.

SECTION - II

Q7) a) If A = {1, 2, 3, 4} and R = {(1, 2), (2, 4), (1, 3), (3, 2)} find its transitive closure by Warshall's Algorithm. **[6]**

b) Let A = {2, 3, 4, 6} and let a R b if a divides b. Show that R is a partial order and draw its Hasse Diagram. **[6]**

OR

Q8) a) Consider the functions f, g: R $\rightarrow$ R defined by $f(x) = x^2 + 3x + 1$, $g(x) = 2x - 3$. Find the composition functions: **[6]**

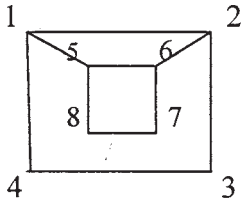
i) fof

ii) fog

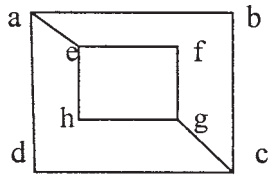
iii) gof

b) Let A = {*a, b, c*} and let $M_R = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 1 & 1 \end{bmatrix}$. Determine whether R is an equivalence relation. **[6]**

Q9) a) Define isomorphism of graphs. Determine whether following graphs are isomorphic or not. **[5]**



G_1



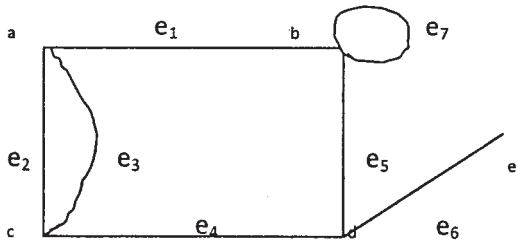
G_2

b) Determine the number of edges in a graph with 6 nodes, 2 of degree 4 and 4 of degree2. Draw one such graphs. **[4]**

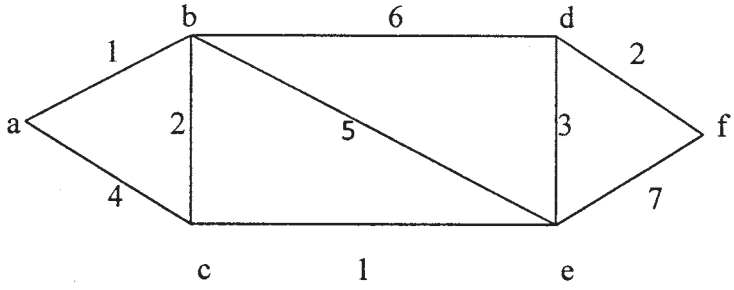
c) Define edge connectivity and vertex connectivity with example. **[3]**

OR

Q10)a) Find the Adjacency matrix and Incidence matrix of following graph. **[4]**



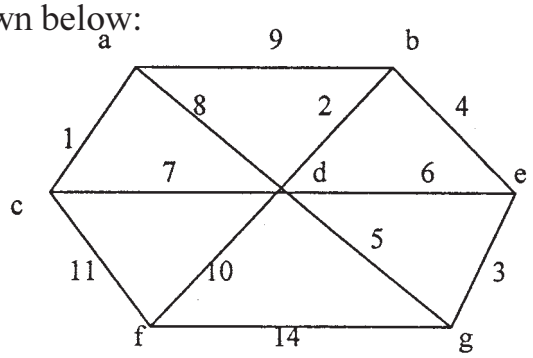
b) Apply Dijkstra's algorithm to the graph given below and find the shortest path from *a* to *f*. **[6]**



c) Determine the number of regions defined by a connected planar graph with 6 nodes and 10 edges. **[2]**

Q11)a) Construct an optimal binary prefix code for the following sets of weights. 1, 2, 4, 5, 6, 9, 10, 12. Also find code words for each weight in the set. **[5]**

b) Use Kruskal's algorithm to determine a minimum spanning tree for the graph shown below: **[6]**



OR

Q12)a) Define: **[5]**

i) Rooted tree

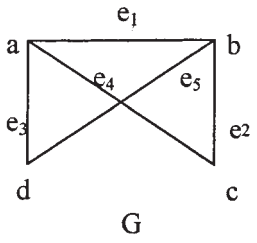
ii) m-ary tree

iii) full binary tree

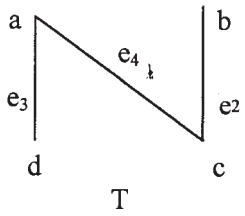
iv) height of tree

v) spanning tree

b) Find the fundamental system of cut-set for the following graph with respect to the spanning tree T as shown below. **[3]**



G



T

c) Explain Prim's Algorithm to find minimum spanning tree. **[3]**

Total No. of Questions : 12]

SEAT No. :

P1765

[Total No. of Pages :3

[4761] - 13
F.Y.M.C.A. (Engg.)
FOUNDATION OF INFORMATION TECHNOLOGY
(2008 Course) (510903) (Semester - I)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Construct logic circuit diagram for following expression using AND/ OR/NOT gates. **[4]**

$(A + B) . (A^{-} + C).(A + D).$

b) Differentiate between the characteristics of primary and secondary storage of computer system. **[4]**

c) Show the binary digits used to record the word base in BCD. **[4]**

OR

Q2) a) What is an IC? How does it helps in reading reducing the size of computer? **[4]**

b) Find decimal equivalent of following: **[4]**

i) $(111.01)_2$

ii) $(247.65)_8$

c) List out all similarities and difference between 7-bit & 8-bit ASCII. **[4]**

Q3) a) Compare: **[8]**

i) RISC & CISC

ii) Sequential and Direct access memory.

b) What is Flat Panel monitor? Where is it commonly used? **[4]**

OR

P.T.O.

Q4) a) What are different registers in processor? Name some of commonly used registers and briefly describe the function of each. **[6]**

b) What is hard disk? Name three different types of hard disk. Give the typical usage of each type. **[6]**

Q5) a) Compare: **[6]**

i) Interpreter and compiler.

ii) Natural language and high computer language.

b) What is mnemonic? How is it useful in case of computer languages? **[5]**

OR

Q6) a) What are the different ways of acquiring software? List out their relative advantages and limitations. **[6]**

b) What are the characteristics of good programming language? **[5]**

SECTION - II

Q7) a) What is virtual memory? Explain the basic concept used for realization of virtual memory. **[8]**

b) What are the main functions of an Operating System? **[4]**

OR

Q8) a) What is multiprocessing? Draw the basic organization of diagram of a typical multiprocessing system. **[6]**

b) Write a short note on following with reference to a Spreadsheet package. **[6]**

i) cell content

ii) Range of cells

Q9) a) What is program bug? What is debugging? **[4]**

b) What is file management system? **[4]**

c) What is Documentation? Explain different forms of documentation. **[4]**

OR

Q10)a) What are the two standard method used in data processing system for organizing data? Explain the relative advantage and disadvantages. **[8]**

b) What is data redundancy explain with example. **[4]**

Q11)a) Describe the layering concept in the OSI Model of network architecture with the function of each layer. **[8]**

b) What is a newsgroup? How it is useful? **[3]**

OR

Q12)a) Describe the two basic methods of multiplexing. Give use of both the methods. **[8]**

b) What is File Transfer Protocol? **[3]**

Total No. of Questions : 12]

SEAT No. :

P1766

[Total No. of Pages : 4

[4761] - 14

First Year M.C.A. (Under Engineering Faculty)

PROBABILITY AND STATISTICS

(2008 Course) (Semester - I)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of probability table, electronic pocket calculator is allowed.***
5) ***Assueme suitable data if necessary.***

SECTION - I

Q1) a) State and prove Baye's theorem. **[6]**

b) Husband and wife appear for an interview. The probability of husband gets selected is 1/7 and wife gets selected is 1/5.What is the probability that selected **[6]**

i) only one of them is selected

ii) both of them are selected

iii) none of them is selected

OR

Q2) a) A box contains 15 red, 20 green, 25 orange and 30 blue balls. Two balls are drawn from a box at random. Find the probability that **[6]**

i) both are red

ii) first is orange and second is blue

iii) first is red and second is green

b) What are the Axioms of probability? Illustrate with example. **[6]**

Q3) a) Define with example: **[6]**

i) Probability Density Function

ii) Event

iii) Marginal probability

P.T.O.

b) It has been found that 60% of the rides of 2 wheeler put on crash helmets. Find the probability that **[6]**

i) 4 out of 5 will be using their helmets.

ii) At least 4 out of 5 will be using their helmets.

OR

Q4) a) Explain the terms: **[6]**

i) Independent events

ii) Sample Space

iii) Conditional probability

b) A random variable has the following probability mass function **[6]**

x	-2	-1	0	1	2	3
$p(x)$	0.1	k	0.2	$2k$	0.3	$3k$

Find

i) k

ii) $p(x<2)$

iii) $p(-2 < x < 2)$

Q5) a) Write note on **[5]**

i) Binomial Distribution

ii) Poisson Distribution

b) Buses arrive at a specified stop at 15 minutes intervals starting at 7 a.m. They arrive at 7, 7.15, 7.30 and so on. If a passenger arrives at the stop at a random time that is uniformly distributed between 7 a.m. and 7.30 a.m. Find the probability that he/she waits less than 5 minutes for a bus. **[6]**

OR

Q6) a) A joint p.d.f. of random variable X is given by: **[6]**

$$f(x) = c(x-1) \quad for\ 1 < x < 4$$
$$= 0 \qquad \text{otherwise}$$

Find

i) k

ii) $f(2 < x < 4)$

b) Write note on **[5]**

i) Normal Distribution

ii) Uniform Distribution

SECTION - II

Q7) a) What is point estimator and point estimate? Write properties of estimator. **[5]**

b) Write note on **[6]**

i) Sampling with replacement

ii) Sampling without replacement

OR

Q8) a) Explain the following terms: **[6]**

i) Confidence Interval

ii) Central Limit Theorem

iii) Methods of Moments

b) Explain significance testing? How does it differ from hypothesis testing? **[5]**

Q9) a) What is maximum likelihood estimation? Explain the method to obtain maximum likelihood estimate. **[6]**

b) Explain the following terms: **[6]**

i) Null hypothesis and research hypothesis

ii) Type I and type II errors

iii) Critical region for the test

OR

Q10)a) Write a short note on student's t - distribution. **[6]**

b) Explain χ^2 test of independence of attributes. **[6]**

Q11)a) Explain Statistical Quality Control (SQC) with its advantages and limitations. **[6]**

b) Write note on Mean chart and Range chart. **[6]**

OR

Q12)a) Explain the χ^2-test as a test of goodness of fit. Write the steps. **[6]**

b) Write note on p chart and np chart. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1767

[Total No. of Pages : 2

[4761] - 15
F.Y.M.C.A. (Engg.)
MANAGEMENT SCIENCE
(2008 Course) (Semester - I) (510905)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) What is the contribution of Henry Fayol to the management science? **[8]**

b) Explain the concept of management, Administration and organization in brief. **[4]**

OR

Q2) a) Define Management. Explain different functions of Management. **[8]**

b) Explain different advantages the industry will have by applying MBO. **[4]**

Q3) a) Discuss on Intellectual Property law. **[4]**

b) What are the different functions of chamber of commerce? Give at least five names of chamber of commerce in India. **[8]**

OR

Q4) a) What are the salient features of Law of constructs? **[8]**

b) Explain the concept of E-Commerce. **[4]**

Q5) a) Discuss Co-operative organization with advantages and disadvantages. **[6]**

b) With the help of Block Diagram explain Matrix organization. **[5]**

OR

P.T.O.

Q6) a) What are the different factors that affect form of Business organization? **[6]**

b) Enumerate the features of line and staff organization. What are their limitations? **[5]**

SECTION - II

Q7) a) Write short note on Six Sigma. **[6]**

b) Explain of Business process re-engineering. **[6]**

OR

Q8) a) Explain job evaluation in brief. **[6]**

b) Explain training process with objections, advantages briefly. **[6]**

Q9) a) Explain any three industrial acts you know. **[6]**

b) Explain minimum wage acts in brief. **[6]**

OR

Q10)a) What is noise pollution and how it is controlled? **[6]**

b) Explain the objective and scope of factory act 1948. **[6]**

Q11)a) Explain TQC-Total Quality Control in brief. **[5]**

b) Write short note on ISO 9000 standard. **[6]**

OR

Q12)a) What are the objectives of Quality Control? **[4]**

b) Write seven steps suggested by Juran to improve quality. **[7]**

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Total No. of Questions : 12]

SEAT No. :

P1768

[Total No. of Pages : 3

[4761] - 21
F.Y.M.C.A. (Engg.)
OBJECT ORIENTED PROGRAMMING
(2008 Course) (Semester - II) (510909)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain abstraction, message passing and encapsulation concept with example. **[6]**

b) What is procedure oriented programming? Explain with example. **[5]**

OR

Q2) a) Explain object, class and information hiding concept with example. **[6]**

b) What is object oriented programming? Why object oriented programming called bottom up approach? **[5]**

Q3) a) What are the advantages of using new operator as compared to the function malloc ()? Write a program to allocate memory to array using new operator. **[6]**

b) What is reference variable? What is the difference between pointer and reference variable? **[6]**

OR

P.T.O.

Q4) a) What is function overloading? Write a C++ program to overload volume Function that calculate volume of circle, rectangle, square. **[6]**

b) What is class? Explain difference between structure and class with example. **[6]**

Q5) a) What is constructor? What is the difference between Default and Parameterized constructor? Give an example of each. **[6]**

b) What is friend function? What are the characteristics of friend function? Give one example of friend function. **[6]**

OR

Q6) a) What is copy constructor? Why should the formal argument of a copy constructor be reference object? Give one example of copy constructor. **[6]**

b) Write a C++ program to perform addition two complex number. **[6]**

SECTION - II

Q7) a) What is operator overloading? Write a C++ program to overload + operator. **[6]**

b) Explain binary and unary operator overloading using friend function. **[6]**

OR

Q8) a) Write a C++ program using operator overloading and friend function to negate a given number. **[6]**

b) What is the difference between unary and binary operator? Explain binary operator overloading with example. **[6]**

Q9) a) Explain mechanism of passing parameters to the base class constructor in inheritance with example. **[6]**

b) What is the difference between Polymorphism and Inheritance? Explain with example. **[6]**

OR

Q10)a) What is pure virtual function? Explain with suitable example. **[6]**

b) What is inheritance? Explain multilevel inheritance with example. **[6]**

Q11)a) What is an exception? Writ a program to handle user define exception. **[5]**

b) List Formatted I/O and unformatted I/O Functions in C++. Explain any two functions of each type. **[6]**

OR

Q12)a) What is Manipulator? Explain user-defined manipulators with example. **[5]**

b) Explain the use of throw keyword in C++ with suitable example. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1769

[Total No. of Pages : 3

[4761] - 22

First Year M.C.A. (Under Engineering Faculty)

DATA STRUCTURES AND FILES

(2008 Course) (Semester - II) (510910)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Use separate answer sheets for both the sections.***
2) ***Solve THREE questions from Section-I and THREE questions from Section -II.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain the concept of 2-D array in detail with row and column major implementations & address calculations in both cases. Use the following data for address calculation. Consider the integer array int YY[30] [40] declared in 'C'. Base address is 500 find the address of the element YY [10] [15]. **[7]**

b) Write a program in C to multiply two polynomials. Write the complexity of the code. **[5]**

OR

Q2) a) Explain the concept of ordered list with a suitable example. **[6]**

b) What is sparse matrix? Write an algorithm for fast transpose using sparse matrix. **[6]**

Q3) a) Write the steps in pseudo 'C' code to insert an element at any position in a doubly linked list. **[6]**

b) What are the advantages of the circular linked lists? **[5]**

OR

Q4) a) Write a function to check whether two singly linked list are equal or not? **[6]**

b) How to sort a linked list? Write a program in C to sort a linked lists. **[5]**

P.T.O.

Q5) a) Convert the following infix expression to postfix expression by showing The contents of stack for every iteration. A + (B *C - (D/E$F)*G)*H. **[6]**

b) What is queue? Describe algorithm for operations performed on queue? **[6]**

OR

Q6) a) Give an ADT for queue. **[6]**

b) What is stack? What are the applications of stack? **[6]**

SECTION - II

Q7) a) Define the following terms: **[6]**

i) Multi Graph

ii) Connected graph

iii) Complete graph

b) What is a binary tree? Explain all tree traversals in detail. **[6]**

OR

Q8) a) Explain index sequential search with a suitable example. **[6]**

b) Construct a binary search tree from the following data. **[6]**

14,10,17,12,20,11,8,25,18,22,30,23,7,13.

Q9) a) Explain in detail Best, Worst and average time complexity of **[7]**

i) Quick sort

ii) Merge sort

b) Write a recursive C function for binary search with a suitable example. **[4]**

OR

Q10)a) Write a pseudo code for insertion sort & calculate its complexity? **[5]**

b) Explain the concept of sort order and sort stability with respect to sorting. **[6]**

Q11)a) What is meant by collision? Explain collision resolution techniques. **[6]**

b) What is hashing? What are the characteristics of good hashing functions? Write different hashing functions. **[6]**

OR

Q12)a) Describe Direct access file and write a 'C' implementation for insert And delete operations of it. **[6]**

b) Write a short note on linear probing. **[6]**

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Total No. of Questions : 6]

SEAT No. :

P1770

[Total No. of Pages : 5

[4761] -23
F.Y.M.C.A. (Engineering Faculty)
OPERATIONS RESEARCH
(2008 Course) (Semester - II) (510911)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Figures to the right indicates full marks.***
3) ***Use of electronic non-programmable pocket calculator is allowed.***
4) ***All questions are compulsory.***

SECTION - I

Q1) a) Solve the given LPP by Simplex Method. **[8]**

Maximize $z = 6x_1 + 8x_2$

s.t. $5x_1 + 10x_2 <= 60$

$4x_1 + 4x_2 <= 40$

And $x_1, x_2 >= 0$

b) Explain the primal-dual relationship. **[4]**

OR

Q1) a) An electric company manufactures two models at two different plants. The daily capacity of the first plan is 60 radios and that of second is 75 radios. Each unit of the first model requires 10 pieces of a certain electric component; whereas each unit of the second model requires 8 pieces of the same component. The maximum daily availability of the special component is 800 pieces. The profit per unit of the first model is Rs. 300 and that of second is Rs. 200. Formulate the LPP and solve by graphical method. **[8]**

b) What is LPP? Write the general form of LPP. **[4]**

P.T.O.

Q2) a) Find the IBFS by VAM of the following transportation problem. **[6]**

Warehouse	Factories				Requirement
	I	II	III	IV	
A	4	8	7	6	150
B	9	5	8	8	50
C	6	5	8	7	40
D	5	8	6	3	60
E	7	6	5	8	200
Capacity	100	80	120	100	

b) Explain the transshipment model. **[5]**

OR

Q2) a) A computer centre has got 4 expert programmers. The centre needs 4 programs to be developed. The head of the computer centre after carefully studying the program estimated the time in minutes required by respective experts programmers as follows **[6]**

Experts	Programmers			
	A	B	C	D
1	120	100	80	90
2	80	90	110	70
3	110	140	120	100
4	90	90	80	90

Solve the above assignment problem to allot maximum experts to programmers.

b) Explain the difference between transportation and an assignment problem. **[5]**

Q3) a) From the information given below, draw network diagram and critical path. Find the probability that the project will be completed within 32 days. **[8]**

Activity	Time Estimates (Days)		
	Optimistic	Most likely	Pessimistic
1-2	2	5	10
1-3	8	10	12
2-4	6	12	15
3-4	3	7	10
3-5	4	8	12
4-5	7	10	14
5-6	5	8	13
3-6	4	7	10

b) Explain following terms. **[4]**

i) Forward and backward pass

ii) Dummy Activity

OR

Q3) a) Write the steps of Floyd's Algorithm. **[4]**

b) Explain the following terms. **[8]**

i) Optimistic time

ii) Pessimistic time

iii) Most likely time regarding an activity

iv) PERT

SECTION - II

Q4) a) The following are the data from the predicted basebook on computer services employment (in thousands). **[7]**

Year	1	2	3	4	5	6	7	8	9	10	11	12	13
Employ	271	304	337	365	416	476	542	589	631	676	740	775	792

Find the time series linear regression equation and the forecast for next year's computer services employment.

b) What is Goal programming? Explain any one method to solve Goal Programming problem. **[5]**

OR

Q4) a) Use Branch and Bound method to solve following LPP. **[7]**

Minimize $z = 4x_1 + 3x_2$

s.t. $5x_1 + 3x_2 >= 30,$

$x_1 <= 4, x_2 <= 6$

and $x_1, x_2 >= 0,$

x_1, x_2 are integers.

b) Explain any two forecasting techniques in brief. **[5]**

Q5) a) Following is the pay off table. **[8]**

Strategy	Sales of nature		
	N1	N2	N3
	Inflation	Recession	No change
A	2000	1200	1500
B	3000	800	1000
C	2500	100	1800

Which strategy should be chosen on the basis of

i) Pessimistic

ii) Optimistic

iii) Equally likely (Laplace)

iv) Regret criterion

b) Write the steps of decision making process. **[4]**

OR

Q5) a) Explain Decision making under certainty using AHP. **[6]**

b) What is decision making under risk? Explain expected value criterion. **[6]**

Q6) a) A milk dairy records sales of 1 liter packets during 100 days are as follows: **[6]**

Demand	8	9	10	11	12	13	14	15	16	17
No. Of Days	5	9	10	15	13	8	11	14	8	7

Using the following random no. simulate the demand for the first 5 days:

[23,64,18,96,71,46,54,8,11,81,75,39,28,43,52].

b) Write a note on 'Monte-Carlo simulation'. **[5]**

OR

Q6) a) Explain in brief generation of Random numbers. Generate three random numbers based on multiplicative congruential method using b = 17, c = 111, m = 103, seed = 7. **[6]**

b) Write a note on pseudo-random numbers. **[5]**

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Total No. of Questions : 12]

SEAT No. :

P1771

[Total No. of Pages : 3

[4761]-24
F.Y. M.C.A. (Engg.)
MICROPROCESSOR APPLICATIONS
(2008 Pattern) (Semester-II) (510912)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***From Section-I, answer (Q. 1 or Q. 2), (Q.3 or Q. 4), (Q. 5 or Q. 6).***
2) ***From Section-II, answer (Q. 7 or Q. 8), (Q. 9 or Q. 10), (Q. 11 or Q. 12).***
3) ***Answers to the two sections should be written in separate answer books.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right side indicate full marks.***
6) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Explain the functioning of the following pins of 8085 microprocessor. Indicate their activation status. **[8]**

i) restart interrupt

ii) Address latch enable

iii) Input output/Memory

iv) READY

b) Explain Arithmetic and logical group of 8085 microprocessor. **[4]**

OR

Q2) a) Explain the concept of tri-state logic. Explain unidirectional and bidirectional buffer with neat diagram and truth table. **[8]**

b) Explain various flag registers in 8085. **[4]**

Q3) a) Explain WAIT state by using Time Diagram. **[6]**

b) Draw and explain Timing Diagram of MOV C, A instruction. **[6]**

OR

P.T.O.

Q4) Explain the execution of the following instructions with examples. **[12]**

a) MOV Rd, Rs

b) MVI M, Data

c) LDA Address

d) STA Address

Q5) a) Draw and explain block diagram of 8255 PPI. **[7]**

b) Explain mode 0 of 8255 PPI. **[4]**

OR

Q6) a) What are 8255 initialization Operating Modes. **[6]**

b) What are the advantages and disadvantages of I/O mapped I/O over memory mapped I/O. **[5]**

SECTION-II

Q7) a) Give details of hardware interrupt and software interrupt of 8085. **[8]**

b) Explain functional block diagram of 8253 with neat diagram. **[4]**

OR

Q8) a) Draw and explain the pin diagram of 8253. **[8]**

b) What do you mean by interrupt? What is ISR? What is the functions of ISR. **[4]**

Q9) a) What is 8086 microprocessor? Explain features of 8086 microprocessor. **[8]**

b) List & explain all the registers of 8086. **[4]**

OR

Q10)a) For the following instruction compute the address of memory operand for 8086 microprocessor. **[4]**

i) MOV AX, [BX] ii) MOV AL, [BP+SI]

Assume

CS = 1000H DS = 0200H SS =04000H ES = 0030H

BP = 0010H DX = 0020H SI = 0030H SP = 0030H

Clearly show computation.

b) Explain programmer model of the 8086 microprocessor? **[6]**

c) What is pipelining? **[2]**

Q11)a) Explain the DB, DW, DD, DQ and DT 8086 assembly language directive in detail. **[5]**

b) Explain component of DOS. How does handle interrupt? **[6]**

OR

Q12)a) Write 8086 assembly language program to reverse a number. **[8]**

b) List and explain the Dos Calls for displaying the character(s). **[3]**

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Total No. of Questions : 12]

SEAT No. :

P1772

[Total No. of Pages : 2

[4761]-25
F.Y. M.C.A. (Engg.)
MANAGEMENT INFORMATION SYSTEM
(2008 Pattern) (Semester-II) (510913)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Define MIS discuss its role & importance in an Organisation. **[7]**

b) Explain Types of Information System. **[5]**

OR

Q2) a) Explain the Components & Resources of information system. **[7]**

b) Why is MIS looked upon as strategic need of Management today? **[5]**

Q3) a) Explain in detail transaction processing system as applications of MIS using examples. **[8]**

b) Explain the concept of Enterprise Application Integration. **[4]**

OR

Q4) a) Explain cross functional Enterprise system with suitable example. **[8]**

b) Discuss the role of MIS in Banking sector. **[4]**

Q5) a) Discuss Business Process Outsourcing & their challenges. **[6]**

b) Explain ERP Modules. **[5]**

OR

Q6) a) What do you mean by BPR? Explain the Value stream model. **[6]**

b) What do you mean by EMS? Explain various components of EMS. **[5]**

P.T.O.

SECTION-II

Q7) a) Write short notes on (Any Two): **[8]**

i) Phases of CRM.

ii) Trends in SCM.

iii) Process of e-Commerce.

b) Explain Push & Pull factor of Marketing. **[4]**

OR

Q8) a) What do you understand by CRM? Explain its Benefits & challenges. **[8]**

b) Explain working of Knowledge Information Portals. **[4]**

Q9) a) Explain the basic types of analytical modeling activities using decision support system. **[8]**

b) Explain GIS with suitable example. **[4]**

OR

Q10)a) Write short notes on the following: **[8]**

i) EIS.

ii) AIS.

b) Explain What-if analysis with suitable example. **[4]**

Q11)a) Explain disaster recovery & Elaborate on Fault-tolerant system. **[7]**

b) Explain the ethical responsibilities of business professionals. **[4]**

OR

Q12)a) Explain biometric security. List the different Hacking techniques. **[7]**

b) Do you think it face issues during its application in Global management? **[4]**

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Total No. of Questions : 12]

SEAT No. :

P1773

[Total No. of Pages :3

[4761] - 31
S.Y.M.C.A. (Engg.)
OPERATING SYSTEM
(2008 Course) (Semester - III) (610901)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume Suitable data if necessary.***
6) ***Use of calculator is allowed.***

SECTION - I

Q1) a) What are the fundamentals of language processing activities. **[5]**

b) Differentiate between lexical analysis and syntax analysis. **[4]**

c) What is a single pass assembler? **[3]**

OR

Q2) a) Explain the importance of system software for a computers. **[5]**

b) Describe the design of a Two Pass Assembler. **[4]**

c) Compare Application Software and System Software. **[3]**

Q3) a) Explain the phases of a compiler. **[6]**

b) Explain an absolute loader with its advantages and disadvantages. **[5]**

OR

Q4) a) Explain the Macro definition and call with a suitable example. **[6]**

b) Discuss the loader schemes. **[5]**

Q5) a) Explain any 4 functions of an operating system in detail. **[7]**

b) What is process? What is process control block (PCB)? Explain in detail. **[5]**

OR

P.T.O.

Q6) a) Solve the following question using CPU Scheduling Algorithm. Consider following set of jobs. **[6]**

Job	Arrival Time	Run Time
1	19	2
2	07	3
3	22	1
4	34	2

Determine finish time and turn around time using following methods.

i) Round Robin. (assume quantum = 5)

ii) SJF

b) What are the different types of schedulers? Explain with suitable diagram. **[6]**

SECTION - II

Q7) a) Consider page referencing string given as 1, 2, 3, 4, 2, 1, 5, 6, 1, 2, 3, 7. Number of page frames are three. Show the page trace and calculate no of page faults for the following page reference schemes. **[8]**

i) LRU

ii) Optimal Page Replacement.

b) Differentiate between Internal and External Fragmentation. **[4]**

OR

Q8) a) Explain the concept of segmentation? What is paged segmentation? What are different types of segment? **[8]**

b) What is Swapping? Explain how the space is allocated using swapping? **[4]**

Q9) a) Explain Acyclic - Graph Directory structure? **[4]**

b) Differentiate between Linked Allocation & Index allocation of disk space. **[8]**

OR

Q10)a) Draw a neat diagram of linked allocation method & explain. **[4]**

b) Describe the structure of disk. **[4]**

c) Explain C Scan algorithm with example. **[4]**

Q11)a) Explain the following components of a Linux system. **[6]**

i) Kernel.

ii) System libraries.

iii) System utilities.

b) Explain linking process in execution of user programs in Linux. **[5]**

OR

Q12)a) Draw and explain the basic Linux file system organization. **[6]**

b) List process management system calls and explain any two. **[5]**

Total No. of Questions : 12]

SEAT No. :

P1774

[Total No. of Pages :3

[4761] - 32

S.Y.M.C.A. (Under Engineering Faculty)

DATABASES : CONCEPTS AND SYSTEMS

(2008 Pattern) (Semester - I) (610902)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) What is database? What are the functions of DBMS. **[5]**

b) Draw the architecture of DBMS. Describe query processor. **[7]**

OR

Q2) a) Describe the main characteristics of Database approach and compare it with the file-based approach. **[5]**

b) Draw three-schema architecture of DBMS. Explain the level of data abstraction in DBMS. **[7]**

Q3) a) Design E-R diagram for college database that is used to keep track of its faculty, departments, student, courses. Specify the key attributes of each entity set, role names, and mapping cardinality. Make appropriate assumptions to complete the specification. **[6]**

b) Explain mapping cardinality constraints with example. **[6]**

OR

Q4) a) Explain Specialization and Generalization in EER. **[6]**

b) Design an E-R diagram for a hospital with set of patients and a set of medical doctors. Associates with each patient a log of the various tests and examinations conducted. **[6]**

P.T.O.

Q5) a) Short Notes on: **[4]**

i) Primary key.

ii) Foreign key.

iii) Check constraints.

iv) Not NULL.

b) What is view? What is the advantage and disadvantage of view? **[5]**

c) Define Integrity Constraints. **[2]**

OR

Q6) a) Specify the CODD's norms to be specified by RDBMS. **[6]**

b) What is SQL? Explain in brief DDL and DML statement of SQL. **[5]**

SECTION - II

Q7) Explain following statements with example: **[12]**

a) Declare cursor.

b) Open.

c) Loop.

d) Fetch.

e) Rowtype.

OR

Q8) a) Customer (cid, cname, caddress, city, state) **[6]**

Order (oid, odate,cid,ord_amt)

Customer and order are related with one to many relationships.

Solve the following queries:

i) Create the tables and put constraints.

i) List names of customer who belong to Maharashtra state, sorted on city.

iii) What are the names of all customers who placed the ordered between 01/01/2011 to 31/03/2012?

iv) Define constraint on order amount such that it should be always > 0.

v) Find how much order has placed in one day.

vi) Put the constraint for order amount that is in one day maximum amount will allowed to 10000.

b) Write a short note on: **[6]**

i) ODBC.

ii) PL/SQL.

Q9) a) What is Normalization? Explain 1NF and 2NF. **[4]**

b) Compute the closure of following set F of functional dependencies for relation schema R = (A, B, C, D, E)

A –> BC

CD –> E

B –> D

E –>A

List candidate keys for R. **[8]**

OR

Q10)a) Explain Database design methodology. **[6]**

b) Show that, if a relation schema is in BCNF, then it is also in 3NF. **[6]**

Q11)a) Write a short note on: **[8]**

i) Concurrency control protocols.

ii) Recovery techniques.

b) What is dead lock? How to prevent? **[3]**

OR

Q12)a) Explain two phase locking protocols with example. **[8]**

b) Explain the purpose of checkpoint mechanism. **[3]**

Total No. of Questions : 12]

SEAT No. :

P1775

[Total No. of Pages :4

[4761] - 33

S.Y.M.C.A. (Engineering Faculty)

FINANCIAL ACCOUNTING AND MANAGEMENT

(2008 Pattern) (Semester - III) (610903)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) What is Financial Accounting? What are different terms used in accounting? Explain in brief. **[6]**

b) Discuss the assets and liabilities side of the balance sheet? **[6]**

OR

Q2) a) Record the following transaction, in a journal of Suraj for the month of June 2012: **[8]**

July 1, 2012	Suraj commenced his business with a capital of Rs.	1,00,000
July 2, 2012	Bought Machinery	30,000
July 3, 2012	Bought goods for cash from Ram	5,000
July 4, 2012	Sold goods for cash to Ramesh	4,000
July 5, 2012	Paid salary to clerk	3,500
July 6, 2012	Cash sales to Sumit	12,000
July 7, 2012	Credit sales to Harish	3,400
July 8, 2012	Deposited cash in bank	2,000

b) Explain the rules of Debit and Credit. **[4]**

P.T.O.

Q3) a) Explain various ratio analysis in brief: **[6]**

b) What are different elements of cost? Explain in brief? **[6]**

OR

Q4) a) The following information is obtained from Godrej Ltd., Gorkhpur for the year ended 31-3-2011. **[8]**

Sales (1,00,000 Units)	Rs. 1,00,000
Marginal Cost	Rs. 60,000
Fixed Cost	Rs. 30,000

Calculate:

i) P/V Ratio

ii) BEP (Sales-value)

iii) Sales to earn a profit of Rs. 15,000

iv) Profit when sales amounted to Rs. 1,40,000

b) Explain followings: **[4]**

i) Limitations of Ratio analysis.

ii) Marginal Costing.

Q5) a) What is working capital? Explain the importance of working capital? **[6]**

b) Distinguish between current assets and fixed assets with example? **[5]**

OR

Q6) a) Explain the factors that determine the working capital needs of a firm. **[6]**

b) Explain the theory of working capital management with a diagram? **[5]**

SECTION - II

Q7) a) What is Capital budgeting? State the factors affecting capital budgeting? **[6]**

b) A firm whose cost of capital is considering two mutually exclusive proposals X and Y, the details of which are as follows: **[6]**

Year	Project X	Project Y
1	Rs. 1,50,000	Rs. 1,50,000
2	Rs. 10,000	Rs. 65,000
3	Rs. 25,000	Rs. 60,000
4	Rs. 55,000	Rs. 57,500
5	Rs. 75,000	Rs. 52,500

Calculate: Pay-back period for each project and advice which of the two projects is profitable.

OR

Q8) a) Explain different limitations of capital budgeting? **[6]**

b) Compute the present value of an investment outlay of Rs. 10,000/- in the present and Rs. 10,000/- after one year. The scrap value of the equipment after 5 years is Rs. 1,000/- The discount rate is 10%. **[6]**

Q9) a) What are the various approaches to the estimate of overall cost of capital? Explain in brief? **[6]**

b) A share holder purchased a share of Rs. 500/-. For 5 years he received dividend at the rate of 10% per year. At the end of 5 years, he sold his share for Rs. 650/- What is his rate of return? **[6]**

OR

Q10)a) What is cost of capital? Why should a financial manager know the cost of capital of his firm? **[6]**

b) A company has issued 20 year bonds of Rs.1000/- face value at Rs. 900/- each. Rate of interest is 10% and the tax rate for the company is 52%. The company has taxable profit. What is the cost of bond capital. **[6]**

Q11)Explain the features or characteristics of any financial software / tool, which should be useful or important to finance manager of any organization. **[11]**

OR

Q12)a) Explain the process in Tally 9.0 for preparation financial statements. **[6]**

b) What are the Advantages and Disadvantages of computerized accounting system? **[5]**

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Total No. of Questions : 12]

SEAT No. :

P1776

[Total No. of Pages : 2

[4761] - 34
S.Y.M.C.A. (Engg.)
COMPUTER COMMUNICATIONS & NETWORKS
(2008 Course) (Semester - I) (610904)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION - I

Q1) What is Multiplexing? Explain types of multiplexing with their usage in detail. **[12]**

OR

Q2) a) Explain any two guided media in detail. **[6]**

b) Explain transmission modes with examples. **[6]**

Q3) a) Describe peer-to-peer network and client server network in detail. **[6]**

b) Explain Stop-and-Wait protocol with suitable diagram. **[6]**

OR

Q4) What are the different network hardware components? Explain each in detail. **[12]**

Q5) a) Explain the working of pure ALOHA. **[6]**

b) Write a short note on **[5]**

i) Switched Ethernet

ii) Fast Ethernet

OR

Q6) a) Explain persistent & non persistent CSMA. **[6]**

b) Explain Broadband Wireless. **[5]**

P.T.O.

SECTION - II

Q7) a) What are the different congestion control techniques? Explain any one in detail. **[6]**

b) Explain Multicast Routing. **[6]**

OR

Q8) a) What is purpose of ARP & RARP protocols? Explain with neat diagram. **[6]**

b) What are different routing algorithms? Explain any one in detail. **[6]**

Q9) a) Explain how TCP provides flow control mechanism. **[6]**

b) Explain the working of UDP. **[5]**

OR

Q10) Explain with suitable diagram, the parameters involved in process to process communication. Give the different types of parts with their ranges. **[11]**

Q11)a) Differentiate between persistent & non-persistent HTTP connection. **[7]**

b) What are the important functions of the e-mail system? **[5]**

OR

Q12)a) What is Domain Name System (DNS)? Explain various DNS servers. **[6]**

b) What Electronic Mail architecture and list out the services offered by SMTP? **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1777

[Total No. of Pages : 2

[4761] - 35
S.Y.M.C.A. (Engg.)
PRINCIPLES OF MULTIMEDIA
(2008 Course) (Semester - III) (610905)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) How is multimedia presentation made effective? **[4]**

b) Explain any two multimedia document architecture. **[8]**

OR

Q2) a) Explain GTK+ and QT. **[6]**

b) Explain streaming technologies. **[6]**

Q3) a) Explain various ways in which image can be enhanced. **[6]**

b) Write a note on TIFF and JPEG. **[6]**

OR

Q4) a) Discuss the various types of image compression. **[6]**

b) Discuss the types of image compression. **[6]**

Q5) a) What are the physical characteristics of sound waves? **[5]**

b) Explain the various CD formats. **[6]**

OR

Q6) a) Discuss the elements of audio system. **[6]**

b) Explain WAV and MPEG. **[5]**

P.T.O.

SECTION - II

Q7) a) Discuss the various text file formats. **[6]**

b) Differentiate between LZ and LZW compression. **[6]**

OR

Q8) a) Explain various DVD formats. **[6]**

b) Write note on H-261 and H-263. **[6]**

Q9) a) Explain VRML with a sample program. **[5]**

b) How is virtual reality applied in today's world? **[6]**

OR

Q10)a) Discuss the concept of virtual reality. **[6]**

b) Explain virtual objects in VRML. **[5]**

Q11)Write short notes on: **[12]**

a) onion skinning

b) motion cycling

c) masking

OR

Q12)Write short notes on: **[12]**

a) morphing

b) color cycling

c) flip book animation

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Total No. of Questions : 12]

SEAT No. :

P1778

[Total No. of Pages : 3

[4761] - 41

S.Y.M.C.A. (Engineering Faculty)

SOFTWARE ENGINEERING

(2008 Pattern) (Semester - IV) (Theory) (610909)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer three questions from Section-I and three questions from Section-II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assuem Suitable data if necessary.***

SECTION - I

Q1) a) What are the characteristics of software? Explain the following. **[6]**

i) Customer Myths

ii) Practitioner's Myths

b) Explain all levels of CMMI. **[6]**

OR

Q2) a) What do you understand by Evolutionary model? Draw and explain the Concurrent Development Model. **[6]**

b) Explain the concept of process pattern with example. **[6]**

Q3) a) What is software process model? Explain personal and team process models. **[6]**

b) Explain spiral model? What are the advantages of this model over the traditional models. **[6]**

OR

Q4) a) Explain the phases of unified process with suitable example. **[8]**

b) Explain Hatley-Pirbhai Modeling with an example. **[4]**

P.T.O.

Q5) a) What are the importance of software principles and practices? Explain any two practices. **[8]**

b) Draw a Swim lane diagram for airlines reservation systems. **[3]**

OR

Q6) a) Describe the Class Responsibility collaboration model with example. **[8]**

b) Explain the Scenario-based Analysis for requirement engineering. **[3]**

SECTION - II

Q7) a) What is the importance of software design? How analysis model is translated into design model? **[6]**

b) Explain User Interface Analysis and Design Process. **[6]**

OR

Q8) a) Explain the following of The Design Model:

i) Architectural design elements **[3]**

ii) Interface design elements **[3]**

b) What do you mean by modularity? What is its contribution towards achieving a good quality software? **[6]**

Q9) a) What are the strategic issues in software testing? **[6]**

b) Explain in brief verification and validation. **[5]**

OR

Q10)a) Explain the two methods of software testing with example. **[6]**

b) How the software testing can be carried out by using object oriented approach? Explain its various methods. **[5]**

Q11)a) Write a note on: **[6]**

i) Orthogonal Array testing

ii) Basic path testing

b) What is the purpose of software maintenance? Explain with software metric for maintenance. **[6]**

OR

Q12)a) What do you mean control structural testing? Explain its various types. **[6]**

b) What are the attributes of effective software metric? Explain measure, measurement and metrics. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1779

[Total No. of Pages : 3

[4761] - 42
S.Y.M.C.A. (Engineering)
WEB TECHNOLOGY
(2008 Course) (610910)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***From Section-I, answer (Q1 or Q2) and (Q3 or Q4) and (Q5 or Q6).***
2) ***From Section-II, answer (Q7 or Q8) and (Q9 or Q10) and (Q11 or Q12).***
3) ***Answers to two sections should be written in separate books.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***
6) ***Make suitable assumptions wherever and relevant.***

SECTION - I

Q1) a) What is tier? Compare 2-tier architecture with 3-tier architecture. **[6]**

b) Explain applications of Web Technologies in E-Commerce in brief. **[5]**

OR

Q2) a) What is WWW? What are different components of Web Technologies? **[5]**

b) Explain in detail stepwise execution of dynamic web pages with suitable example and neat diagram. **[6]**

Q3) a) Create a static HTML page that displays the following output using frame: **[6]**

ABC Company Pvt.Ltd	
About us Introduction Product Details Contact us	

P.T.O.

b) Explain the following tags in brief with their attributes: **[6]**

i) img

ii) font

iii) select

iv) ul

OR

Q4) a) What is CSS? What are the various ways to apply a CSS to an HTML document? **[6]**

b) How to apply class and id in CSS? Explain with suitable example. **[6]**

Q5) a) What are main difference between. **[6]**

i) ASP and JSP

ii) Client Side Scripting and Server Side Scripting

iii) VBScript and JavaScript.

b) Explain any two control and looping statements in VBScript. **[6]**

OR

Q6) a) Write a procedure in VBScript to calculate average marks of student for four subjects. Accept marks of four subjects from user. **[6]**

b) Write string and date functions of VBScript. **[6]**

SECTION - II

Q7) a) Explain array concept in JavaScript with suitable example. **[5]**

b) How events are handled in JavaScript? Illustrate with suitable examle. **[6]**

OR

Q8) a) Write a program to validate email id of user in JavaScript. **[5]**

b) Explain in brief Math and Date objects in JavaScript. **[6]**

Q9) a) Describe in brief any four implicit objects in JSP. **[4]**

b) Write a JavaScript code to check the password strength when user is typing password. (Don't write code on Submit.) **[8]**

Password length > = 10	Strong
Password length < 10 and > = 5	Medium
Password length < 5	Weak

OR

Q10)a) Describe Model I and Model II architecture in JSP. **[6]**

b) What is AJAX? Explain the "onreadystatechange event of AJAX model. **[6]**

Q11)a) Explain the .net framework. Explain how it is platform independent. **[6]**

b) Explain the server controls in ASP.Net. **[6]**

OR

Q12)a) What is AJAX? How the working of AJAX model in detail. **[6]**

b) List and explain all validation controls in ASP.net. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1780

[Total No. of Pages : 3

[4761]-43

S.Y. M.C.A. (Engineering)

OBJECT ORIENTED ANALYSIS & DESIGN

(2008 Pattern) (Semester-IV) (Backlog)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) What are the advantages of object oriented approach? **[6]**

b) Explain 4+1 view architecture. **[6]**

OR

Q2) a) In brief give UML history, what were the goals, objectives of UML team? **[6]**

b) Write a short note on need for CORBA middleware. **[6]**

Q3) a) Write a short note on: UML metamodel. **[6]**

b) Show how stereotypes, tagged values, constraints can be used to extend UML through appropriate examples for say modeling a college library application. **[6]**

OR

Q4) a) What is OCL? Explain with example. **[6]**

b) Which are the various behavioral diagrams in UML 2.0? Explain role of each diagram in brief. **[6]**

Q5) a) Draw the class diagram for Courseware management system. The organization offers a variety of courses in variety of area such as learning management techniques and understanding different software languages and technologies. Each course is made up of a set of topics. Tutors in

P.T.O.

the organization are assigned courses to teach according to the areas that they specialized in and their availability. The organization publishes and maintain a calendar of the different courses and assigned tutors every years. There is a group of course administrator in the organization who manage the courses including course contents, assign courses to tutors and defined the course schedule. **[6]**

b) Explain the Composite structure diagram with example. **[5]**

OR

Q6) a) Draw the class diagram for a car rental application. The car rental agency has multiple offices/branches. The customer visits the agency for enquiry and takes a test ride then selects the car by signing terms and conditions form. The customer can also book the car through telephone, email and SMS. The agency checks the availability of cars and gives the status to the customer. The customer can also avail the driver facility if required by paying additional charges. The billing is done based on the type of vehicle and distance travelled. **[7]**

b) Explain the term aggregation and dependencies with example. **[4]**

SECTION-II

Q7) a) Draw a Sequence Diagram for self service machine. The main function of self service machine is to allow a customer to buy a products from a machine **[8]**

- The customer wants to buy some of the products offered by the self-service machine. First of all he/she inserted money into the machine, select one or more products and machine presents a selected products to the customer. It's possible that the self service machine is out of one or more products or the machine hasn't the exact amount of money to return to customer.
- When the customer insert money into machine and enters his or her's selection. After this if machine is out of brand, in this case it's preferable to present a message to the customer that machine is out of brand and allow him or her to make another selection or return money back. If incorrect amount of money scenario has happened, then self service machine is supposed to return original amount of money to the customer.
- A supplier has to restock the machine and a collector has to collect the accumulated money from the machine.

b) Explain communication diagram with example. **[4]**

OR

Q8) a) Explain use of different combined fragments in sequence diagram with example. **[6]**

b) Draw a communication diagram for withdrawing money from ATM. Make suitable assumptions. **[6]**

Q9) a) What is a sub state? Explain with example. **[6]**

b) Explain use of fork and join in activity diagram with an example system. **[6]**

OR

Q10)a) Explain the Timing diagram with example. **[6]**

b)
- Draw a Activity Diagram for MCA admission process. **[6]**
- MCA admission process is as follows:
  - DTE Advertises the date of MCA Entrance examinations
  - Student has to apply for the entrance examination
  - Result announced by DTE
  - Student has to fill up the option form to select the college of his/her choice
  - DTE displays allotment list in the web site and intimation to all colleges.
  - Students should visit the allotted colleges and complete the admission process.

Q11)a) Explain the concept of Package Diagram with example. **[6]**

b) Write note on 'Applications of UML in embedded systems'. **[5]**

OR

Q12) a) Why we draw Component Diagram. **[5]**

b) Explain the features of Deployment Diagram. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1781

[Total No. of Pages : 2

[4761]-44
S.Y. M.C.A. (Engg.)
HUMAN COMPUTER INTERFACE
(2008 Course) (Semester-II) (610913)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***From Section-I, answer (Q. 1 or Q. 2), (Q.3 or Q. 4) and (Q. 5 or Q. 6).***
2) ***From Section-II, answer (Q. 7 or Q. 8), (Q. 9 or Q. 10) and (Q. 11 or Q. 12).***
3) ***Answers to the two sections should be written in separate answer books.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right side indicate full marks.***
6) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) What are different Human Factors that are to be considered while designing the user interface? Explain with the help of suitable examples. **[5]**

b) Explain following terms related to the human short - term memory. **[6]**

i) Digit Span ii) Chunking

iii) Regency effect iv) Closure

OR

Q2) a) Explain the similarities and differences in human memory and computer memory. **[6]**

b) Explain the goals of user interface design. **[5]**

Q3) a) With help of Norman's Model of interaction explain the process of execution evaluation cycle. **[6]**

b) Explain the Goals, Operator, Methods and Selection (GOMS) cognitive model. **[6]**

OR

Q4) a) How to organize a display. Explain how to get user's attention. **[6]**

b) Explain three techniques to prevent errors. **[6]**

P.T.O.

Q5) a) What is use of scenarios and how it is useful in design process? **[6]**

b) What is navigational design? Explain with example of Website. **[6]**

OR

Q6) a) Explain with short note LUCID. **[6]**

b) Explain Software Engineering tools used in design. **[6]**

SECTION-II

Q7) a) Explain importance and use of dialog design notation in direct manipulation system. **[6]**

b) What are the strategies to design item representation sequence? **[5]**

OR

Q8) a) Write a note on Multiple Windows Design. **[6]**

b) Write a note on "Use of Natural Languages in Computers". **[5]**

Q9) a) Discuss important issues involved in designing a web page. **[6]**

b) What guidelines you can suggest for presenting the error messages in an effective style? **[6]**

OR

Q10)a) What are three major problems with hypermedia? **[6]**

b) Explain the possible productive use of CSCW in a software development Company. **[6]**

Q11)a) Explain concept of Information Visualization with an example. **[6]**

b) Write a note on Embedded system. **[6]**

OR

Q12)a) Write a short note on: Social acceptability of user interface. **[6]**

b) Write a note on use of interactive devices for communication with specially able category of users. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1782

[Total No. of Pages : 2

[4761]-45
S.Y. M.C.A. (Engg.)
ORGANISATIONAL BEHAVIOUR
(2008 Course) (Semester-IV) (610913)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Explain in brief Autocratic model of Organisational behaviour. **[6]**

b) Explain in detail Goal setting & Reward system. **[6]**

OR

Q2) a) What is Organisational Behaviour? Discuss Various challenges & opportunities available in this field. **[7]**

b) Discuss SOBC Model of OB. **[5]**

Q3) a) Explain Vector Vroom's expectancy theory of motivation. **[6]**

b) Explain the relationship between Moral & Productivity. **[6]**

OR

Q4) a) Compare & Contrast Maslow's theory of need hierarchy with Herzberg's two factor theory. **[7]**

b) Explain stress management in brief. **[5]**

Q5) a) How Performance Appraisal helps in overall development of an employee & organisation. **[6]**

b) Which factors influence the human resource planning in organisation? **[5]**

OR

P.T.O.

Q6) a) Explain how to handle conflict within an organisation. **[6]**

b) Discuss the growing popularity of team in an organisation. **[5]**

SECTION-II

Q7) a) Write short notes on (Any Two): **[8]**

i) Organisational Development.

ii) Organisational culture.

iii) Organisational effectiveness.

b) Discuss Black & Mouton's theory of leadership. **[4]**

OR

Q8) a) Explain the Traits, behavioural & situational approaches for leadership style. **[6]**

b) Explain briefly about Hersey & Blanchard's theory. **[6]**

Q9) a) Discuss conflict process & conflict resolution technique. **[8]**

b) List the forces responsible for change. **[4]**

OR

Q10)a) Write short notes on: **[8]**

i) Traditional vs Modern view of conflict.

ii) Constructive & destructive conflict.

b) How the change within an organisation leads to the effective development of an organisation. **[4]**

Q11)a) Define total Quality Management & discuss its different techniques. **[7]**

b) What is the relation between Learning organisation & Empowerment? **[4]**

OR

Q12)a) Explain the importance of business Re-engineering. **[5]**

b) What is Learning organisation? Discuss the limits of learning organisation. **[6]**

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Total No. of Questions : 12]

SEAT No. :

P1783

[Total No. of Pages : 2

[4761]-46
S.Y. M.C.A. (Engg.)
JAVA PROGRAMMING
(2008 Pattern) (Semester-IV) (610912)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) What is the difference between throw and throws keyword? **[4]**

b) Explain different ways of creating threads in Java. **[6]**

c) What is the difference between sleep() and wait() method. **[2]**

OR

Q2) a) Explain working of Java Virtual Machine (JVM). **[4]**

b) What is package? How to define and use package in Java? Explain usage of CLASSPATH variable. **[6]**

c) What is Interface and its use? **[2]**

Q3) a) What is delegation event model in Java? Explain any two event handlers with methods associated with it. **[6]**

b) Give use of following swing controls **[6]**

i) J Frame.

ii) J TabbedPane.

iii) J Tree.

OR

Q4) a) What are different Layout managers? Explain any one layout manager in detail. **[6]**

b) Design a Java application with two Jlist and one button. Copy items from one Jlist to another when button is clicked. **[6]**

P.T.O.

Q5) a) List various methods in Applet class. Explain all methods in detail. **[6]**

b) Explain HTML Applet tag with example. **[5]**

OR

Q6) a) Write the applet program that accepts font name and font size using <param> tag and apply it to the text on applet. **[6]**

b) What are the different ways to execute applet? Explain with example. **[5]**

SECTION-II

Q7) a) What is the need of serialization? How it is achieved in Java? **[6]**

b) Distinguish between: **[6]**

i) Inputstream and Reader classes.

ii) Outputstream and Writer classes.

OR

Q8) a) What interfaces are implemented by Random AccessFile class? Explain methods of RandomAccessFile class. **[6]**

b) Explain StringTokenizer class in detail. **[6]**

Q9) a) Explain with example resultsetmetadata class. **[5]**

b) Classify JDBC drivers types according to their architecture. **[6]**

OR

Q10)a) What is the use of statement class? How to retrive data from the result set. **[6]**

b) Write Java code to connect to a database using JDBC. **[5]**

Q11)a) Explain ServerSocket and DatagramSocket classes. **[6]**

b) Explain different Network exceptions. **[6]**

OR

Q12)a) Write a program to establish a connection between client and server. **[8]**

b) Describe use of InetAdress class. **[4]**

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Total No. of Questions : 12]

SEAT No. :

P1784

[Total No. of Pages : 2

[4761]-51
T.Y. M.C.A. (Engg.)
PRINCIPLES AND PRACTICES FOR IT PROJECT MANAGEMENT
(2008 Pattern) (Semester-V)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer 3 questions from section-I and 3 questions from section-II***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) What is project management? Describe project management life cycle. **[6]**

b) Discuss business ethics & social responsibility. **[6]**

OR

Q2) What are the different roles played by managers? Also explain the importance of management. **[12]**

Q3) a) What are the functions of IT in functions like logistics? **[6]**

b) How IT plays a role in customer relationship? **[6]**

OR

Q4) a) How information technology can be applied in banking? **[6]**

b) Give case study of agriculture & service sector. **[6]**

Q5) In a preliminary planning of an IT project how the project information is gathered and the project goals are defined. **[11]**

OR

Q6) Write a note on requirement analysis for any IT project. Illustrate by giving an example. **[11]**

P.T.O.

SECTION-II

Q7) How a project manager will be able to cope up with the project delays? Explain its various solutions by considering one scenario on your own. **[12]**

OR

Q8) a) Write a note on managing team issues. **[6]**

b) Write a note on delaying of the project. **[6]**

Q9) a) What are formal technical reviews for teams? **[6]**

b) Explain team structure with its importance. **[6]**

OR

Q10) What are the strategies for resolving conflicts? Explain in detail. **[12]**

Q11) Explain the IT approaches towards supply chain management. **[11]**

OR

Q12) a) Write a note on CMM, CMMI and PCMM. **[6]**

b) Write a note on Six Sigma. Explain its different belts. **[5]**

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Total No. of Questions : 12]

SEAT No. :

P1785

[Total No. of Pages :2

[4761] - 52
T.Y.M.C.A. (Engg.)
COMPUTER GRAPHICS
(2008 Pattern) (Semester - I) (710902)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Write a short note on Character generation using starburst principle. **[6]**

b) Explain the Circle Drawing algorithm. **[5]**

OR

Q2) a) Explain the use of Graphics Primitives with Joystick & Trackball. **[6]**

b) Explain the Data Generating devices & primitive operations with them. **[5]**

Q3) a) Explain inverse transformation and derive the matrix for inverse transformation for translation. **[6]**

b) Explain the Scan Conversion algorithm for Polygon. **[6]**

OR

Q4) a) Explain the different methods for testing whether the pixel is inside the polygon. **[6]**

b) Explain rotation about an arbitrary point. **[6]**

Q5) a) What is windowing and clipping? What do you mean by interior and exterior clipping? Explain how exterior clipping is useful in multiple window environment. **[6]**

b) Explain the Cyrus-Beck algorithm for Clipping. **[6]**

OR

P.T.O.

Q6) a) Explain the Image Transformation done using Segment table. **[6]**

b) Explain the Raster Techniques. **[6]**

SECTION - II

Q7) a) Describe with respect to 3D transformation. **[6]**

i) Scaling,

ii) Translation.

b) Explain with example, 3D viewing transformation. **[6]**

OR

Q8) a) What is need of clipping? Explain the midpoint subdivision algorithm in 3D clipping. **[6]**

b) Rotate object about z axis such that x-axis passes through a point P(xp, yp, 0) in x-y plane. **[6]**

Q9) a) Why hidden surface algorithms are required? What are two major methods to detect hidden surfaces? **[6]**

b) Explain RGB color model. **[5]**

OR

Q10)a) Explain Warnock's Algorithm. **[6]**

b) Explain CMY color model. **[5]**

Q11)a) Explain B-Spline curve. **[6]**

b) Explain Real-Time Animation. **[6]**

OR

Q12)a) Explain Bezier curve generation. **[6]**

b) Explain Fractals. How are they classified? Explain Fractal Lines and Fractal Surfaces. **[6]**

Total No. of Questions : 12]

SEAT No. :

P1786

[Total No. of Pages :3

[4761] - 53

T.Y.M.C.A. (Under Engineering Faculty)

ADVANCED DATABASES

(2008 Course) (Semester - V)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Let relations r_1(A, B, C) and r_2(C, D, E) have the following properties. $r_1$has 20000 tuples, r_2 has 45000 tuples, 25 tuples of r_1 fit on one block and 30 tuples of r_2 fit on one block, Estimate the number of block accesses required using nested loop join. **[5]**

b) With suitable diagram explain the basic steps in query processing. **[6]**

OR

Q2) a) Describe Linear Search Algorithm for selection operation. **[5]**

b) Explain the external merge-sort algorithm with suitable example. **[6]**

Q3) a) Explain Two Phase Commit (2PC) Protocol for distributed databases in detail with suitable diagram. **[6]**

b) Explain any two parallel database architectures in detail with suitable diagrams. **[6]**

OR

Q4) a) Explain pipelined parallelism and independent parallelism with example. **[6]**

b) What are the homogeneous and heterogeneous distributed database systems? Explain the fragmentation and replication with example. **[6]**

P.T.O.

Q5) a) What is the need of complex data type? Illustrate with suitable example. **[6]**

b) A college maintains a database for teachers and students. A database schema is as given below: **[6]**

name: fname, mname, lname

address: streetno, city, state, zipcode

phoneno: home, work

person: name, address, date_of_birth, phoneno

teacher: person, dept, designation, qualification, experience, date_of_joining

student: person, course, class, division, rollno, date_of_admission

Construct SQL: 1999 schema definition for this database. Use inheritance where appropriate.

OR

Q6) a) How does one can access collection values? Illustrate array and multiset with suitable example. **[6]**

b) What do you mean by Persistent Programming Languages? Explain Persistence in Java. **[6]**

SECTION - II

Q7) a) Explain star schema for the multidimensional databases in detail with suitable diagram. **[6]**

b) While analyzing the data, it was found that many tuples have no recorded values for several attributes. How this problem of missing values can be resolved? Illustrate with an example. **[5]**

OR

Q8) a) What is data warehouse? Explain data warehouse architecture in detail with suitable diagram. **[6]**

b) What are the different OLAP operations? Explain any two OLAP operations with suitable diagram and example. **[5]**

Q9) a) A database has four transactions. Let min_sup=2, min_conf=50%. Find all frequently occurred items using Apriori algorithm. Find best rules from support and confidence values. **[8]**

TID	ITEM
10	A, C, D
20	B, C, E
30	A, B, C, E
40	B, E

b) Write a note on Decision Tree. **[4]**

OR

Q10)a) What is clustering? What are different clustering techniques? Explain k-means algorithm for clustering with suitable example. **[8]**

b) Write a note on text mining. **[4]**

Q11)a) Define the following terms: **[6]**

i) False Positive

ii) False Negative

iii) Hub

iv) Authority

b) Explain characteristics and architecture of web search engines. **[6]**

OR

Q12)a) Explain in detail popularity ranking. **[6]**

b) Write note on the following: **[6]**

i) Homonym, Synonym.

ii) Term Frequency.

iii) Inverse Document Frequency.

Total No. of Questions : 12]

SEAT No. :

P1787

[Total No. of Pages : 2

[4761] - 54
T.Y.M.C.A. (Under Engineering Faculty)
ENTERPRISE RESOURCE PLANNING
(2008 Course) (710904)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Use of probability table, electronic pocket calculator is allowed.***
4) ***Assume Suitable data if necessary.***

Q1) a) What is ERP? The advantage of ERP and reason for growth of ERP. **[6]**

b) Why integrated data model is considered the heart of an ERP system? Explain details? **[6]**

OR

Q2) a) Explain the scope of an ERP system and business values of an ERP system? **[6]**

b) What do you understand by the term competitive advantages? How should an organization go about achieving it? **[6]**

Q3) a) Explain requirement elicitation process? **[6]**

b) What are reasons for employee resistance? Discuss various method of dealing with it? **[6]**

OR

Q4) a) What is Organizational Requirement? Diff. types of requirements? **[6]**

b) What is organizational culture? How organizational culture form? **[6]**

Q5) a) Explain following ERP transition strategies: **[6]**

i) Big Bang Strategy

ii) Phased Strategy

b) Why does ERP system fail? Are there any remedies on failures? **[5]**

OR

P.T.O.

Q6) a) Explain the ERP implementation life cycle with phases? **[6]**

b) Enlist and discuss success factors for ERP system? **[5]**

Q7) a) Discuss why it is not a good idea to develop an ERP package in-house? **[6]**

b) Explain, with the help of an example, the concept of customization? **[6]**

OR

Q8) a) Compare the implementation ERP system with Off the shelf and in house developed ERP packages? **[6]**

b) Explain the selection criteria for ERP Package? **[6]**

Q9) a) Explain ERP, CRM & SCM and Data warehousing integration? **[6]**

b) What are the issues in Global ERP implementation? How can E business can be integrated with ERP? **[6]**

OR

Q10) a) What is BPR? Explain role of IT in implementation in it? **[6]**

b) Explain Service Oriented Architecture of ERP solutions? **[6]**

Q11)a) How ERP system capable of producing dramatic improvements in productivity and profitability? **[6]**

b) Explain the various subsystem of Finance module of an ERP system? **[5]**

OR

Q12) a) Explain sales order processing and Purchasing Order Management in Sales & Distribution Module of ERP? **[6]**

b) Explain the main module of material management? **[5]**

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Total No. of Questions : 12]

SEAT No. :

P1788

[Total No. of Pages : 2

[4761] - 55

T.Y.M.C.A. (Engineering Faculty)

SOFTWARE TESTING

(2008 Course) (Semester - V) (Elective - II) (710905)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer 3 questions from Section-I and 3 questions from Section -II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) What is software measurement? Explain in detail various measurement scales. **[8]**

b) Explain internal and external product attributes. **[4]**

OR

Q2) a) What is data? Explain how to collect, store and extract data. **[8]**

b) Give the difference between direct and indirect measurement. **[4]**

Q3) a) Explain in detail Halstead software science. **[8]**

b) Explain information flow attributes involved in software modules. **[4]**

OR

Q4) a) Explain object oriented metrics in detail. **[8]**

b) Explain Goal Question Metric paradigm. **[4]**

Q5) a) What are the steps involved in preparation of test plan? Explain the steps briefly. **[6]**

b) Describe defect life cycle. **[5]**

OR

P.T.O.

Q6) a) Explain people and organizational issues in testing. **[5]**

b) Write short notes on **[6]**

i) Error

ii) Test Case

iii) Test Suit

SECTION - II

Q7) a) Write a C Program Fragment to find addition of 'n' numbers using loop structure. Draw control flow graph for it and find Cyclomatic complexity number from a flow graph? **[8]**

b) Give the difference between black box testing and white box testing. **[4]**

OR

Q8) a) Explain equivalence class partitioning and boundary value analysis with an example. **[6]**

b) Write short notes on: **[6]**

i) System testing

ii) Unit testing.

Q9) a) Explain Software test automation process in detail. **[8]**

b) Explain what is domain testing? **[4]**

OR

Q10)a) Which are the different factors considered in performance testing? Also define load and stress testing. **[8]**

b) What is Specification based testing? Explain it. **[4]**

Q11)a) What are the different stages in composing the fixes? **[7]**

b) What are the basic steps involved in problem resolution phase? **[4]**

OR

Q12)a) Explain the different tools and repositories present in problem reporting phase. **[7]**

b) Explain the best practices which are followed to improve fix distribution activity. **[4]**

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Total No. of Questions : 12]

SEAT No. :

P3396

[Total No. of Pages : 2

[4761] - 56

M.C.A.-III (Engg. Faculty) (Semester - V)

NEURAL NETWORK AND FUZZY LOGIC

(Elective - II) (2008 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain with neat diagram biological neural network. Compare its performance with artificial Neural Network. **[6]**

b) Comment on different types of learning in neural network. **[6]**

OR

Q2) a) Describe McCulloch-Pitts neuron model in detail. **[6]**

b) What is clustering and what are different methods of clustering? Discuss winner takes all learning network. **[6]**

Q3) a) Discuss the single discrete perceptron training algorithm steps. **[6]**

b) Explain how the delta rule is used to adjust the weights of Adaline network. **[6]**

OR

Q4) a) What is an Activation function? Explain Sigmoidal function in detail. **[6]**

b) Define Bias, Weight, Learning rate and Momentum factor. **[6]**

P.T.O.

Q5) a) Explain the architecture and training algorithm used in Hopfield network. **[7]**

b) What are different Expert System applications? **[4]**

OR

Q6) a) Explain Multilayer Perceptron Network in brief. **[7]**

b) Explain Back-Propagation algorithm in detail. **[4]**

SECTION - II

Q7) Differentiate fuzzy set from classical set and name the properties of classical set. **[12]**

OR

Q8) Explain the operation of fuzzy set with suitable example. **[12]**

Q9) a) Explain in brief TSK fuzzy rule based model. **[6]**

b) Discuss conditional fuzzy proposition and unconditional fuzzy proposition. **[6]**

OR

Q10) a) Define DeFuzzification. Explain different methods of DeFuzzification. **[6]**

b) What are the rules based format used to represent the fuzzy information? **[6]**

Q11) a) What are fuzzy implications? Explain with example. **[6]**

b) Explain Categorical and Qualitative reasoning in detail. **[5]**

OR

Q12) a) Compare between probability theory and possibility theory. **[6]**

b) Explain theory of approximate reasoning. **[5]**