

11. (a) Let L be a lattice. Then for every a and b in L . Prove that

(i) $a \vee b = b$ if and only if $a \leq b$

(ii) $a \wedge b = a$ if and only if $a \leq b$.

Or

(b) Let L be a distributive lattice. Show that if there exists on a with $a \wedge x = a \wedge y$ and $a \vee x = a \vee y$ then $x = y$.

12. (a) Simplify the following :

(i) $x \vee (x' \wedge y)$

(ii) $(x' \wedge y' \wedge z) \vee (x' \wedge y \wedge z) \vee (x \wedge y')$.

Or

(b) Write the following Boolean expressions in an equivalent sum of products canonical form in the three variables x_1, x_2, x_3 .

(i) $x_1 * x_2^1$

(ii) $x_2 \oplus x_3^1$.

13. (a) Find a Turing machine that recognizes the set $\{0^n 1^n / n \geq 1\}$.

Or

(b) Explain the Chomsky on Greibach Normal forms with suitable examples.

3615/S10

MAY 2009

**MATHEMATICAL FOUNDATIONS OF COMPUTER
SCIENCE**

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) Make a truth table for the statement.

$$(P \wedge Q) \vee (\sim Q)$$

Or

(b) Prove that $\neg(P \wedge R) \Leftrightarrow \neg P \vee \neg Q$.

2. (a) Show that

$$(x)(P(x) \vee Q(x)) \Rightarrow (x)P(x) \vee (\exists x)Q(x)$$

Or

(b) For any commutative monoid $(M, *)$ prove that the set of idempotent elements of M forms a submonoid.

3. (a) Show that every finite semigroup has an idempotent element.

Or

(b) If every element of a group G is its own inverse then prove that G is abelian.

4. (a) Define $n!$ recursively and compute $5!$ recursively.

Or

(b) Let $S = \{a, b, c\}$ and $A = P(S)$. Draw the Hasse diagram of the poset A with partial order \subseteq .

5. (a) Define lattice and bounded lattice with examples.

Or

(b) Show that the power set of any set is a lattice under union and intersection.

6. (a) Define a Boolean algebra with an example.

Or

(b) Show that in a Boolean algebra, for any a and b , $(a \wedge b) \vee (a \wedge b') = a$.

7. (a) Construct the grammar for the language :

$$L(G) = \{a^i b^{2i} / i \geq 1\}.$$

Or

(b) Is the string $abaa$ accepted by the finite state automata? Explain.

8. (a) Explain the monoid of a machine m .

Or

(b) Derive CNF of the following grammar.

$$G = \{(S, A), (0, 1), S', (S' \rightarrow 0A / 01, A \rightarrow 1B / 10)\}$$

PART B — ($5 \times 12 = 60$ marks)

Answer ALL questions.

9. (a) (i) Compute the truth table for $(P \Rightarrow Q) \Leftrightarrow (\sim Q) \Rightarrow \sim P$.

(ii) Prove that

$$(P \Leftrightarrow Q) \equiv ((P \Rightarrow Q) \wedge (Q \Rightarrow P)).$$

Or

(b) (i) Prove that $(P \wedge Q) \Rightarrow P$ is a tautology.

(ii) Let n be an integer. Prove that if n^2 is odd, the n is odd.

10. (a) State and prove Lagrange's theorem.

Or

(b) Let G be a group and let $a, b \in G$ then show that if $ab = ba$ then $(ab)^n = a^n b^n$ and $n \in \mathbb{Z}^+$.

	At 70% capacity	At 80% capacity	At 90% capacity
	Rs.	Rs.	Rs.

Semi-Variable overhead :

Power (30% fixed 70% variable) — 20,000 —

Repairs and maintenance — 2,000 —

(60% fixed, 40% variable) — 11,000 —

Fixed over heads :

Depreciation — 3,000 —

Insurance — 10,000 —

Salaries — 62,000 —

Estimated direct labour hours : 1,24,000 hrs

3616/S11

MAY 2009

FINANCIAL MANAGEMENT AND ACCOUNTING

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

SECTION A — (8 × 5 = 40 marks)

Answer ALL the questions.

1. (a) State the functions of accounting.

Or

(b) Explain the types of accounts and its rule for making entries double entry system.

2. (a) Rectify the following errors :

(i) Purchases book is overcast by Rs. 700 (for the month of January)

(ii) Sales book has been undercast by Rs. 250.

(iii) Purchase returns book has been overcast by Rs. 100.

(iv) Sales returns book has been undercast by Rs. 80.

Or

(b) State the differences between cash book and pass book.

3. (a) Draw-up the specimen form of a trading account.

Or

(b) Explain any five limitations of ratio analysis.

4. (a) Write a short notes on :

(i) Budget committee.

(ii) Budget manual.

Or

(b) Prepare a production budget for three months ending March 31, 1986 for a factory producing four products, on the basis of the following information :

Type of product	Estimated stock on January 1, 1986 units	Estimated sales during March, 1986 units	Desired closing stock on March 31, 1986 units
A	2,000	10,000	5,000
B	3,000	15,000	4,000
C	4,000	13,000	3,000
D	5,000	12,000	2,000

5. (a) What are the features of marginal costing?

Or

(b) What are the limitations of cost accounting?

13. (a) You are given the following information in respect of a company :

	Rs.
(i) Fixed cost	13,000
(ii) Variable cost	15,000
(iii) Total cost	28,000
(iv) Net profit	2,000
(v) Net sales	30,000

(1) Find out the break-even point.

(2) Forecast the profit for sales volume

Rs. 50,000.

(3) Estimate the volume of sales turnover to make a net profit of Rs. 10,000.

Or

(b) Draw up a flexible budget for overhead expenses on the basis of the following data and determine the overhead rates at 70%, 80% and 90% plant capacity.

	At 70% capacity	At 80% capacity	At 90% capacity
	Rs.	Rs.	Rs.
Variable overheads :			
Indirect labour	—	12,000	—
Stores including spares	—	4,000	—

(ii) 50 percent of credit sales are realised in the month following the sales and the remaining 50 percent in the second month following. Creditors are paid in the month following the month of purchase.

(iii) Cash at bank on 1-4-1983 (estimated) Rs. 25,000.

Or

(b) What do you mean by ratio analysis? What are the advantages and limitations of ratio analysis?

12. (a) Two types of material, X and Y are used in a factory as follows :

Normal usage 600 units each per week.

Maximum usage 900 units each per week.

Minimum usage 300 units each per week.

Re-order quantity X 4800 units ; Y 7200 units.

Re-order period X 4 to 6 weeks; Y 2 to 4 weeks.

Calculate for each material.

(i) Re-order level.

(ii) Minimum level.

(iii) Maximum level.

(iv) Average stock level.

Or

(b) Briefly explain the basic accounting concepts.

6. (a) Journalise the following in the Journal of Thiru. Ranganathan

		Rs.
1998, Oct 1	Received cash from Sivanthi	25,000
7	Paid cash to Raman	15,000
10	Bought goods for cash	7,000
12	Bought goods on credit from Rajan	18,000
15	Sold goods for cash	10,000
24	Sold goods on credit to Palani	7,000

Or

(b) Write the following transactions of sales in the sales book of Mr. Amalraj and post them in the ledger.

1994 Jan 2	Sold goods to Anthonyraj	Rs. 10,000
11	Sold goods to Jayaraj	Rs. 30,000
20	Sold goods to Govindaraj	Rs. 25,000

7. (a) State the limitations of a Trial Balance.

Or

(b) Calculate economic order quantity from the following. Annual usage-6000 units; price p.u. Rs. 20; cost of placing and receiving one order Rs. 60; carrying cost of one unit p.a. Rs. 2.

8. (a) From the following information, calculate :

(i) Maximum stock level.

(ii) Minimum stock level.

(iii) Re-order level.

Minimum consumption 240 units per day

Normal consumption 300 units per day

Maximum consumption 420 units per day

Re-order quantity 3,600 units

Re-order period 10 to 15 days

Normal order period 12 days

Or

(b) Ravi who newly set up a factory uses cost price as the basis for charging out materials to jobs. The receipts side of the stores ledger account shows the following particulars.

500 articles bought at Rs. 3.00 each.

700 articles bought at Rs. 3.10 each.

Successive issues of 300 and 600 articles were made. At what price should each of these issues be made under LIFO method.

Additional information :

(i) Net profit for the year 1985 amounted to Rs. 60,000.

(ii) During the year a machine costing Rs. 25,000 (accumulated depreciation Rs. 10,000) was sold for Rs. 13,000. The provision for depreciation against machinery as on 31.12.1984 was Rs. 50,000 and on 31.12.1985 Rs. 80,000.

You are required to prepare a cash flow statement.

11. (a) (i) BPL Ltd. wishes to arrange overdraft facilities with its bankers during the period April to June, 1983 when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data, indicating the extent of the bank facilities the company will require at the end of each month :

	Credit Sales	Purchases	Wages
	Rs.	Rs.	Rs.
February 1983	1,80,000	1,24,800	12,000
March	1,92,000	1,44,000	14,000
April	1,08,000	2,43,000	11,000
May	1,74,000	2,46,000	10,000
June	1,26,000	2,68,000	15,000

Rs.

Net loss for the year 10,000

Purchases 1,00,000

Purchases returns 9,000

You are required to determine :

(i) Cost of goods sold.

(ii) Closing stock.

(iii) Total operating expenses.

Or

(b) The comparative balance sheets of M/s. Ram Brothers for the two years were as follows :

Liabilities	December 31		Assets	December 31	
	1984	1985		1984	1985
	Rs.	Rs.		Rs.	Rs.
Capital	1,50,000	1,75,000	Land & Building	1,10,000	1,50,000
Loan from bank	1,60,000	1,00,000	Machinery	2,00,000	1,40,000
Creditors	90,000	1,00,000	Stock	50,000	45,000
Bills payable	50,000	40,000	Debtors	70,000	80,000
Loan from S.B.I.	—	25,000	Cash	20,000	25,000
	<u>4,50,000</u>	<u>4,40,000</u>		<u>4,50,000</u>	<u>4,40,000</u>

SECTION B — (5 × 12 = 60 marks)

Answer ALL the questions.

9. (a) The following trial balance was extracted from the books of Mr. Arun on 30.6.1993.

Particulars	Dr. Rs.	Cr. Rs.
Capital		49,000
Drawings	4,000	
General expenses	5,680	
Buildings	32,000	
Stock 1.7.92	32,400	
Coal	4,480	
Wages	14,400	
Taxes and insurance premium	2,630	
Debtors	12,560	
Creditors		5,760
Discount	1,100	
Loan @ 6%		15,000
Moped	7,500	
Rent	500	
Apprentice premium		1,800
Commission received		2,640
Electricity charges	2,810	

Particulars	Dr. Rs.	Cr. Rs.
Bills payable		7,700
Cash	160	
Bank overdraft		6,600
Indian bank shares	5,000	
Sales		1,30,720
Purchases	93,550	
Interest on loan	450	
	<u>2,19,220</u>	<u>2,19,220</u>

Prepare trading and profit and loss account for the year ended 30.6.93 and balance sheet as on that date after giving effect to the following adjustment.

- (i) Closing stock Rs. 47,000 as on 30.6.1993
- (ii) Six months interest due on loan.
- (iii) Insurance premium prepaid Rs. 230.
- (iv) Premium accrued but not yet received Rs. 200.
- (v) Commission received in advance Rs. 340.

Or

(b) From the following particulars ascertain the, bank balance as would appear in the pass book of Mr. Neelakandan as at 31st Dec. 1994.

(i) The Bank overdraft (credit balance) as per cash book on 31st December 1994 was Rs. 12,000.

(ii) Interest on overdraft for six months ending 31st Dec. 1994 Rs. 400 is debited in the pass book.

(iii) Bank charges for the above period also debited in the pass book amount to Rs. 100.

(iv) Cheques issued but not cashed before 31st December 1994 amounted to Rs. 3,000.

(v) Cheques paid into bank but not cleared and credited before 31st December 1994 were Rs. 5,000.

(vi) Interest on investment collected by the banker and credited in the pass book amounted to Rs. 3,600.

10. (a) The following information was taken from an income statement.

	Rs.
Opening stock	50,000
Sales	1,60,000
Freight incurred	10,000
Sales returns	10,000
Gross profit on sales	60,000

11. (a) Explain with examples the terms : pointer and structure.

Or

(b) Distinguish between local and global variables with suitable C programs.

12. (a) Write a C program to maintain an array of names with insertion, deletion and updation routines.

Or

(b) Write a C program using pointer to compute the sum of all elements stored in an array.

13. (a) Explain the following I/O functions :

- (i) getw ()
- (ii) putw ()
- (iii) fseek ()
- (iv) ftell ().

Or

(b) Write a C program to perform file updation.

3617/S12

MAY 2009

PROGRAMMING IN 'C'

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) List out the basic data types available in C with examples.

Or

(b) State the difference between the declaration of variable and the definition of a symbolic name with example.

2. (a) Explain with examples of relational operators.

Or

(b) Give the syntax of formatted input and output statements.

3. (a) Explain in detail about for.....loop statement.

Or

(b) Write a C program to print the pascal triangle.

4. (a) Distinguish between break and continue statements.

Or

(b) What is an array? How it is declared and initialized?

5. (a) Write a C program to arrange n number in ascending order.

Or

(b) Explain the following string functions :

(i) `streat()`

(ii) `strcmp()`

(iii) `strcpy()`

(iv) `strlen()`.

6. (a) Explain in detail about array with in structures.

Or

(b) Distinguish between Structure and Union.

7. (a) What is Pointer? How it is declaring and initializing?

Or

(b) Write a function using pointer to add two matrices and to return the resultant matrix to the calling function.

8. (a) What is file? How to defining and opening a file?

Or

(b) List out the advantages of command line arguments.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

9. (a) Explain the following C operators :

(i) Increment and Decrement operators

(ii) Special operators.

Or

(b) Explain the meaning and purpose of the following :

(i) Template

(ii) Tag

(iii) Sizeof.

10. (a) Distinguish between actual and formal arguments with an example.

Or

(b) Write a C program to generate fibonacci series of given integer number using recursion.

11. (a) Explain the operations of BCD converter.

Or

- (b) Explain the operation of Binary Full-Adder.

12. (a) Explain the I/O channels.

Or

- (b) Explain the addressing of I/O devices data transfer.

13. (a) Explain cache and Virtual memory.

Or

- (b) Explain semiconductor ROM memory.
-

3618/S13

MAY 2009

**DIGITAL PRINCIPLES AND COMPUTER
ORGANIZATION**

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) Convert the decimal number 95.2515 into its Octal, Binary and Hexadecimal.

Or

- (b) Convert the hexadecimal number BAD.ABC into its decimal equivalent.

2. (a) Using Redundancy theorem, reduce

$$X(A,B,C) = A'BC' + AC' + AB'$$

Or

- (b) What are the merits and demerits of Logic Gates?

3. (a) Implement the following Boolean function with NOR gates.

$$F = XY' + X'Y'$$

Or

- (b) Simplify the following expressions using Sum of Products and Products of Sum.

$$AB'C' + BC' + BD$$

4. (a) Write short notes on BCD Counter.

Or

- (b) Explain how addition and subtraction are done in a parallel arithmetic elements.

5. (a) Explain different instruction formats with example.

Or

- (b) Write notes on Subroutines.

6. (a) Explain the addressing modes of PDP-11.

Or

- (b) Write notes on Pushdown stacks.

7. (a) Write notes on Bit-Slices.

Or

- (b) Write notes on microinstruction.

8. (a) Explain about standard I/O interfaces.

Or

- (b) Explain about synchronization.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

9. (a) Perform $X - Y$ and $X + Y$ and $Y - X$ from the following values using 2's Complement.

$$X = 110011 \quad Y = 110110$$

Or

- (b) Using K-map simplify the following Boolean expressions

$$F(P,Q,R,S,T) = E(0,1,5,8,15,17,19,30)$$

10. (a) Simplify the following Boolean expressions using five variable map.

$$F(A,B,C,D,E) = E(1,3,5,7,9,15,17,18,30)$$

Or

- (b) Explain the design of Accumulator Logic.

13. (a) How will you create a E-mail address? Explain it.

Or

- (b) What are the steps involved in creating an animated slide show.
-

3619/S14

MAY 2009

WINDOWS BASED PC SOFTWARE

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (8 × 5 = 40 marks)

1. (a) What are the uses of Document in start up menu?

Or

- (b) What are the uses of File Manager?

2. (a) Explain any three formatting commands in word.

Or

- (b) How to use the mouse and keyboard?

3. (a) What are the advantages of spelling checking?

Or

- (b) How will you insert a row break? Explain it.

4. (a) What are the common types of controls?

Or

(b) What is a wizard? Explain it.

5. (a) How will you print a document?

Or

(b) List some format commands with examples.

6. (a) How will you create a bar chart in Excel book?

Or

(b) Illustrate the method of inserting and deleting rows and columns with an example.

7. (a) Explain the usage of date and time in worksheet.

Or

(b) Describe about multiple worksheets with an example.

8. (a) Prepare a chart in PowerPoint Presentation with an example.

Or

(b) How will you change the screen saver in desktop publishing?

PART B — (5 × 12 = 60 marks)

9. (a) Describe about accessories icon in your windows.

Or

(b) What do you understand by editing a document?

10. (a) Create a new document to display the student mark statement.

Or

(b) What are the features of word?

11. (a) What are the types of charts available in worksheet?

Or

(b) How will you create a table and explain it?

12. (a) What are the uses of database in worksheet? Explain it.

Or

(b) Explain all statistical functions with examples.

GRAPH THEORY

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — ($8 \times 5 = 40$ marks)

Answer ALL questions.

All questions carry equal marks.

1. (a) In how many ways can a committee consisting of three men and two women be chosen from seven men and five women?

Or

(b) Solve the recurrence relation $a_n + 5a_{n-1} = 9$ with $a_0 = 6$.

2. (a) Define Walk, Path and Circuit. Give example for each.

Or

(b) If a graph has exactly two vertices of odd degree, then prove that there must be a path joining these two vertices.

3. (a) Prove that in any tree with two or more vertices, there are at least two pendant vertices.

Or

(b) Prove that with respect to any of its spanning trees, a connected graph of ' n ' vertices and ' e ' edges has ' $n-1$ ' tree branches and ' $e - n + 1$ ' chords.

4. (a) Define a cut-set. Give an example. Also prove that every cut-set in a connected graph G must contain at least one branch of every spanning tree of G .

Or

(b) Prove that the maximum flow possible between two vertices ' a ' and ' b ' in a network is equal to the minimum of the capacities of all cut-sets with respect to ' a ' and ' b '.

5. (a) Draw the Kuratowski's second graph and show that it is non-planar.

Or

(b) Explain :

(i) Dual of a subgraph

(ii) Dual of a Homeomorphic graph.

6. (a) Define an incidence matrix of a graph G . Give an example. Write the characteristics of an incidence matrix.

Or

(b) Prove that the reduced incidence matrix of a tree is nonsingular.

7. (a) Prove that a graph of ' n ' vertices is a complete graph if and only if its chromatic polynomial is $P_n(\lambda) = \lambda(\lambda-1)(\lambda-2)\dots(\lambda-n+1)$.

Or

(b) Prove that an arborescence is a tree in which every vertex other than the root has an in-degree of exactly one.

8. (a) Enumerate all unlabeled simple graphs of 4 vertices using Polya's theorem.

Or

(b) Define a program digraph. Give a suitable example. Also state the important properties of a digraph representing any valid computer program.

PART B — ($5 \times 12 = 60$ marks)

Answer ALL questions.

All questions carry equal marks.

9. (a) Prove that in a complete graph with ' n ' vertices there are $(n-1)/2$ edge-disjoint. Hamiltonian circuits, if ' n ' is an odd number ≥ 3 .

Or

(b) Prove that every tree has either one or two centers.

10. (a) Define a tree. Illustrate with example. State and prove any two properties of trees.

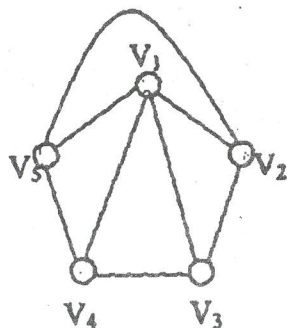
Or

(b) Prove that the maximum vertex connectivity of a graph G of ' n ' vertices and ' e ' edges ($e \geq n-1$) is the integral part of the number $2e/n$.

11. (a) State and Prove Euler's formula.

Or

(b) Define the chromatic polynomial of a graph G .
Find the chromatic polynomial of the following graph.



12. (a) Define the incidence matrix of a digraph. Give example. If A_r is the reduced incidence matrix of a connected digraph, then prove that the number of spanning trees in the graph equals the value of $\det(A_r \cdot A_r^T)$.

Or

(b) Prove that every complete tournament has a directed Hamiltonian path.

13. (a) Given a cube and four balls. In how many ways can the balls be arranged on the corners of the cube? Two arrangements are considered the same if by any rotation of the cube they can be transformed into each other.

Or

(b) Describe the applications of graphs in Computer science.

13. (a) Explain the managerial aspects of software maintenance.

Or

- (b) Explain the Source-code metrics.
- _____

3621/S16

MAY 2009

SOFTWARE ENGINEERING

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (8 × 5 = 40 marks)

1. (a) Write short notes on Managerial Issues.

Or

- (b) Write down the steps to define the problem in planning a software project.

2. (a) List out some factors to consider in setting project goals.

Or

- (b) Explains the prototype Life-Cycle model.

3. (a) Explain the programming team structure.

Or

- (b) Discuss about the product complexity in Software Cost Estimation.

4. (a) Explain the Algorithmic Cost models.

Or

(b) Explain the Transition tables.

5. (a) Explain the structured system analysis.

Or

(b) Write short notes on GIST.

6. (a) Write short notes on Data Flow diagrams.

Or

(b) Explain the Jackson Structured Programming.

7. (a) List out the design guidelines.

Or

(b) Discuss about walk throughs and Inspections.

8. (a) Explain the unit testing.

Or

(b) Explain the five laws of program evolution.

9. (a) Discuss about the quality and productivity factors.

Or

(b) Discuss about how to plan an organizational structure.

10. (a) Explain the major factors that influence software cost.

Or

(b) Explain the languages and processors for requirements specification.

11. (a) Explain the fundamental design concepts.

Or

(b) Explain the Design techniques.

12. (a) Explain the formal verification in detail.

Or

(b) Explain the system testing.

3. (a) Explain system administration.

Or

- (b) Explain about Network Management.

3622/S17

MAY 2009

CLIENT/SERVER COMPUTING

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) What is meant by downsizing and client/server computing?

Or

- (b) Write any four client/server development tools.

2. (a) Write any three advantages of client/server computing briefly.

Or

- (b) What is meant by client services?

3. (a) Write briefly about the following :

- (i) RPC.
- (ii) Remote boot services.
- (iii) Database services.

Or

- (b) Explain about CORBA and OLE.

4. (a) Write any two server functions.

Or

(b) Write briefly about MVS and open VMS.

5. (a) Write short notes on windows, Novell netware and OS/2.

Or

(b) What is meant by SAA?

6. (a) Explain about physical layer, transport layer and session layer.

Or

(b) What is meant by Net BIOS?

7. (a) Explain straight cable, coaxial cable and fiber-optic cable.

Or

(b) Difference between FDDI and CDDI.

8. (a) Give a short note on availability, reliability and serviceability.

Or

(b) Explain about LAN administration and WAN issues.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

9. (a) Give a brief introduction about client/server computing and its applications.

Or

(b) What are client/server development tools and advantages of client/server computing?

10. (a) Explain about request for service.

Or

(b) Explain about DDE, OLE, CORBA and its applications.

11. (a) Explain all network operating system.

Or

(b) Explain all server operating system.

12. (a) Explain about ATM, Hubs and Internet working devices.

Or

(b) Write briefly about pc level processing units.

12. (a) What is inheritance? Create a student's details using inheritance.

Or

(b) Explain about derived classes with parent class constructor with example.

13. (a) Discuss about search tree with example.

Or

(b) Write a C++ program that displays a text file backwards.

3623/S18

MAY 2009

OBJECT ORIENTED PROGRAMMING AND C++

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) Write briefly about class, object and encapsulation.

Or

(b) Write about the basic concepts of object oriented programming.

2. (a) Write about scope qualifier operator.

Or

(b) Explain "Pass-by reference" using pointers.

3. (a) Write about introduction to classes in C++.

Or

(b) Write self reference in classes.

4. (a) What are the different form of inheritance?
Give example.

Or

(b) Explain briefly derived class constructor with example.

5. (a) Write about virtual function.

Or

(b) Explain about finite state machine.

6. (a) Write short notes on OOps as a software design methodology.

Or

(b) Write a short note on abstraction and encapsulation.

7. (a) Write about inline function with example.

Or

(b) Write about new and delete in file with example.

8. (a) Write a note on command line argument in C++.

Or

(b) Explain about a construction and destruction.

PART B — (5 × 12 = 60 marks)

Answer ALL questions.

9. (a) Discuss about :

(i) Reusability

(ii) Maintainability

(iii) Reliability of Software system.

Or

(b) Discuss the various control structures used in C++.

10. (a) (i) Explain about function prototype with example.

(ii) Explain about objects and message.

Or

(b) Explain about files and physical organization of C++ system.

11. (a) Explain about overloading operator with example.

Or

(b) Define two classes POLAR and RECTANGULAR to represent points in the polar and rectangular system. Use conversion routines to convert from one system to the other.

13. (a) State and explain different instruction formats of 8086/8088.

Or

(b) Briefly discuss about the internal I/O interrupt circuit.

3624/S19

MAY 2009

MICROPROCESSORS AND PERSONAL COMPUTERS

(For those who joined in July 2002 and 2005)

Time : Three hours

Maximum : 100 marks

PART A — (8 × 5 = 40 marks)

Answer ALL questions.

1. (a) Discuss the different flags available in 8086 microprocessor.

Or

(b) Brief the use of operators in an assembler.

2. (a) How many interrupt lines does 8086 have?

Or

(b) Explain the addressing modes for control transfer instructions.

3. (a) In addition to the function of a general purpose register what other functions are performed by the register BX, BP and CX?

Or

(b) Differentiate the characteristics of 8 bit and 16 bit processors.

4. (a) What are the assembler directives? Explain.

Or

(b) What is the function of segment register in 8086?

5. (a) Explain the key-code format of 8279.

Or

(b) Discuss the function of instruction pointer and stack pointer in 8086.

6. (a) Explain the keyboard interface.

Or

(b) Discuss the main characteristics of pointers.

7. (a) Explain the general functions of a CRT controller.

Or

(b) Discuss the characteristics of display adopter.

8. (a) Explain the Winchester disk subsystem.

Or

(b) Discuss how DMA can be implemented with 8086.

Answer ALL questions.

9. (a) What are important signals of Intel 8086? Discuss them in brief.

Or

(b) In what way does Intel 8086 differ from 8086?

10. (a) Briefly discuss about the memory subsystem.

Or

(b) Briefly discuss about the I/O subsystem.

11. (a) Describe the functions of microcontroller with a neat diagram.

Or

(b) Explain DMA data transfer.

12. (a) Briefly discuss about the floppy disk subsystem.

Or

(b) What do you mean by addressing modes? What are the different addressing modes supported by 8086? Explain each of them with suitable examples.