

Total No. of Questions : 7]

SEAT No. :

P944

[4768] - 101

[Total No. of Pages : 1

B.C.A.

BUSINESS COMMUNICATION

(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *Attempt any five questions.*
- 2) *Figures to the right indicate full marks.*

Q1) What are the barriers in communication? How will you overcome barriers in communication. **[16]**

Q2) What is listening? State and explain the principles of good listening. **[16]**

- Q3)** a) Draft an Application letter for the post of sales executive in Ajanta Pharmaceuticals co.Ltd Talgaon. **[8]**
- b) Write a reply to your customer m/s mahajan brothers Raviwar peth Pune, regarding his complaint about mistake in the invoice. **[8]**

Q4) Distinguish between written and oral communication. **[16]**

Q5) What is effective speech? Explain in detail techniques of effective speech. **[16]**

Q6) What is business letter? Explain layout of Business letter. **[16]**

Q7) Write short notes (Any Two): **[16]**

- a) Merits and limitations of silence communication.
- b) Oral report.
- c) Closed Circuit T.V.
- d) Telephone answering.



Total No. of Questions : 5]

SEAT No. :

P945

[4768] - 102

[Total No. of Pages : 2

B.C.A.

(112) PRINCIPLES OF MANAGEMENT

(2008 Pattern) (Semester - I)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions carry equal marks.*

Q1) What is management? What are the characteristics of management?

OR

Critically examine Elton Mayo's Hawthorne Experiment.

Q2) What is delegation of authority? Explain the need of delegation.

OR

Write notes on:

- a) Decision Making Process.
- b) Functions of a Leader.

Q3) Evaluate the Maslow's Need Hierarchy Theory of Motivation.

OR

Define control. Explain the need and importance of control.

Q4) Explain the importance and principles of effective organisational communication.

OR

Write notes on

- a) Social Responsibility of Management.
- b) Organisational Changes.

P.T.O.

Q5) Write short notes (Any Four):

- a) Strategic Management.
- b) Direction.
- c) Need of co-ordination.
- d) Stress Management.
- e) Management as a profession.
- f) Total Quality Management.



Total No. of Questions : 5]

SEAT No. :

P946

[4768] - 103

[Total No. of Pages : 3

F.Y. B.C.A.

**113 : Principles of Programming and Algorithm
(2008 Pattern) (Semester - I)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagram must be drawn wherever necessary.*

Q1) Answer the following (Any 8):

[8 × 2 = 16]

- a) What is variable?
- b) Write syntax for print f(.) statement.
- c) List the types of operators.
- d) List the primitive datatype in C language.
- e) What is compiler?
- f) What is preprocessor?
- g) What is algorithm?
- h) List all arithmetic operators.
- i) Give the use of sizeof () operator in C.

Q2) Answer the following (any 4):

[4 × 4 = 16]

- a) Write a short note on Array.
- b) Explain switch-case statement with example.
- c) Write a program to print whether the given number is palindrome or not.
- d) Write a program to print the given array in ascending order.
- e) Explain for loop with example.

P.T.O.

Q3) Answer the following (Any 4):

[4 × 4 = 16]

- a) Write a short note on algorithm.
- b) Explain call by value and call by reference with example.
- c) Write a C program to generate the following pattern.

```
1
2 3
4 5 6
```

- d) Write a C program for multiplication of 2 matrices.
- e) Explain the following terms:
 - i) break
 - ii) continue
 - iii) exit
 - iv) goto

Q4) Answer the following (Any 4):

[4 × 4 = 16]

- a) Write down the features of C programming.
- b) Explain printf() and scan f() statements with example.
- c) Explain preprocessor directives with example.
- d) Trace the following out put and explain

```
void main ( )
{
    printf(“\n%d %d%d”, size of (‘3’), size of (3), size of (30));
}
```

e) Trace the following output and explain

```
void main ()  
{  
    int a[5] = {5, 1, 15, 20, 25};  
    int i, j, m;  
    i = ++ a[1];  
    j = a[1] ++ ;  
    m = a[i ++];  
    printf ("%d %d %d", i, j, m);  
}
```

Q5) Answer the following (Any 4):

[4 × 4 = 16]

- a) What is recursion? Explain in brief.
- b) Explain primitive datatypes in C programming.
- c) Write an algorithm to print maximum number of an array.
- d) Write a program to print fibonacci series upto n terms.
- e) Explain concept and use of header files.



Total No. of Questions : 5]

SEAT No. :

P947

[4768] - 104

[Total No. of Pages : 3

B.C.A.

**114 : COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION
(2008 Pattern) (Semester - I)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw neat diagram wherever necessary.*

Q1) Answer the following (Any Eight):

[16]

- a) Define algorithm.
- b) Write full forms of:
 - i) WYSIWYG
 - ii) GUI
- c) Write any two features of MS-Excel.
- d) List any four secondary storage devices.
- e) Define operating system.
- f) What is the need of batch file?
- g) Define spreadsheet.
- h) Write the purpose of following commands:
 - i) rmdir
 - ii) ls
- i) Define the term desktop.
- j) What is non-volatile memory.

P.T.O.

Q2) Answer the following (Any four):

[4 × 4 = 16]

- a) Differentiate between compiler and interpreter.
- b) Draw & explain flowchart symbols.
- c) Write a note on control panel.
- d) Write purpose & syntax of four external commands.
- e) Write a note on booting process.

Q3) Answer the following (Any four):

[4 × 4 = 16]

- a) Write advantages & disadvantages of flowchart.
- b) Write a batch file that performs following tasks:
 - i) Display current date & time.
 - ii) Display the contents of file PQR.txt.
 - iii) Copy a file PQR.txt to D drive.
 - iv) Delete file ABC.txt.
- c) Write a note on magnetic tape.
- d) Differentiate between primary & secondary memory.
- e) Draw a flowchart to calculate area of circle.

Q4) Answer the following (Any four):

[4 × 4 = 16]

- a) Write an algorithm to check whether a given number is prime or not.
- b) What is chart? Explain different types of charts in MS-excel.
- c) Differentiate between DOS & Linux.
- d) Explain characteristics of computer.
- e) Write a note on HLL.

Q5) Answer the following (Any four):

[4 × 4 = 16]

- a) Draw a block diagram of computer & explain.
- b) Write any four features of MS-Word.
- c) Perform the following:
 - i) $(596)_{10} = (?)_8$
 - ii) $(60)_{10} = (?)_2$
 - iii) $(1\ 1\ 0\ 1\ 1\ 1\ 0)_2 = (?)_8$
 - iv) $(1\ 0\ 0\ 1)_2 = (?)_{10}$
- d) Write a note on types of RAM.
- e) Explain multiprogramming operating system & multiprocessing operating system.



Total No. of Questions : 5]

SEAT No. :

P948

[4768] - 105

[Total No. of Pages : 4

F.Y. B.C.A.

**BUSINESS ACCOUNTING
(2008 Pattern) (Semester - I)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of calculator is allowed.*

Q1) a) Fill in the blanks: [5]

- i) Only ____ transactions are recorded in the books of Accounts.
- ii) Journal is a book of original _____.
- iii) There are ____ Types of balances in Accounts.
- iv) Normally personal and Real Account are _____ .
- v) _____ issues Accounting standard in India.

b) State whether the following statements are True or False: [5]

- i) All Accounting standards are mandatory.
- ii) Closing stock is valued at the end of the year at Market price only.
- iii) Profit and Loss Account is prepared to ascertain Gross Profit/ Gross Loss.
- iv) The minor cash payment are termed as petty cash payments or petty expenses.
- v) A pass book is issued by the banker to the customer.

c) Match the followings: [5]

‘A’

‘B’

- | | |
|-------------------------|-----------------------------------|
| 1) Return Inward | i) Book Debts |
| 2) Sundry Debtors | ii) Transportation on sales |
| 3) Carriage outward | iii) Fixed Asset |
| 4) Live stock | iv) Sales Return |
| 5) Straight line method | v) depreciated value becomes zero |

P.T.O.

d) Classify the following accounts into personal Account, Real Account and Nominal Account. [5]

- i) Loose Tools A/c
- ii) Prepaid insurance A/c
- iii) Loan Account
- iv) P's capital Account
- v) Bank A/c

Q2) What is Accounting standard? Explain advantages of Accounting standards and arguments against setting accounting standards. [12]

OR

What is book keeping? State the difference between book keeping and Accounting. [12]

Q3) a) Journalise the following transactions in the books of S.Palkar for the month of December, 2013 [8]

- 1. S. Palkar started business with cash Rs. 50,000.
- 7. Deposited Rs. 25,000 into the bank.
- 9. Purchased Goods from sita Rs. 5000.
- 11. Sold Goods to Maya Rs. 3000.
- 15. Purchased Furniture for Rs. 3000.
- 19. Sold Goods for cash Rs. 2000.
- 20. Paid carriage Rs. 50.
- 25. Received commission Rs. 25.

- b) Calculate the amount of depreciation under straight line method in each of the following Machines. [8]

Types of Machine	Purchase Price (Rs.)	Expenses to be Capitalised (Rs.)	Residual value (Rs.)	Expected Life years
A	80,000	20,000	40,000	4
B	17,000	3,000	2,000	10

- Q4)** Disha Trading company, Pune deposits its daily collection of cash and cheque into the bank on the same day and makes all payments by cheque. Write up the cash book from the following cash and bank transactions for May 2014. [16]

1. Bank Balance Rs. 5,000.
3. Received from Narayan Rs. 1,200 in full settlement of Rs. 1,240 for sale of office equipment.
6. Borrowed Rs. 10,000 from Mr. Naresh @ 10% p.a.
8. Paid to Nabab Rs. 800 by cheque and received a discount of Rs. 20.
11. Supplied to Naman Goods of Rs. 1,800 as per his order and allowed a cash discount for Rs. 60 for cash.
14. Bought office Type writer for Rs. 2,750 and received a discount of Rs. 50, balance paid by cheque.
16. Withdrew Rs. 500 from Bank for domestic purposes.
19. Transferred Rs. 2000 from Bank current A/c to Bank saving A/c.
22. Drew Rs. 1,000 for petty cash.
24. Paid salary Rs. 1,200 by cash and Rs. 800 by cheque.
26. Received a cheque of Rs. 370 from Nakul in full settlement of Rs. 400 and endorsed to Nupurin full settlement of Rs. 420.
28. Received instructions from Bank for direct deposit of Rs. 640 by our customer, Navin.

Q5) From the following Trial Balance of Bharat Bonsode, Nashik, prepare the Final Accounts as on 31st March 2013. **[16]**

Debit	Rs.	Credit	Rs.
Land & Buildings	87,000	B's Capital	2,00,000
Plant & Machinery	17,500	Sales Less Returns	94,000
Goodwill	20,000	Reserve for D.D	1,500
B's Drawings	22,600	Creditors	7,500
Cash in hand	1,795		
Stock on 1.4.2012	27,000		
Wages	10,000		
Purchase Less Returns	69,000		
Carriage inward	600		
Traveller's Commission	6,000		
Insurance	2,000		
Motor Car	3,000		
Carriage outward	1,400		
Salaries	15,000		
Bank Charges	105		
Debtors	20,000		
	3,03,000		3,03,000

The following adjustments are to be considered:

- a) On 31st March 2013, the stock was valued at Rs. 46,000.
- b) Insurance premium amounting to Rs. 800 is prepaid.
- c) Outstanding salaries amounted to Rs. 1000.
- d) Depreciate plant & Machinery @ 10% p.a. and Motor car @ 20% p.a.
- e) Create a Reserve for Doubtful Debts @ 10% on debtors.



Total No. of Questions : 8]

SEAT No. :

P949

[4768] - 201

[Total No. of Pages : 1

B.C.A.

**211 : ORGANISATIONAL BEHAVIOUR
(2008 Pattern) (Semester - II)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *Solve any five questions.*
- 2) *All questions carry equal marks.*

Q1) Define Organization Behaviour. Explain the fundamental concept and models of Organizational Behaviour. **[16]**

Q2) What is Attitude? Explain Nature & Functions of Attitude. **[16]**

Q3) Define Motivation. Explain in detail Theory X and Theory Y of Motivation. **[16]**

Q4) What is Personality? Explain any two theories of Personality. **[16]**

Q5) What are the Causes of Stress? Explain. **[16]**

Q6) Define Leadership. Explain various qualities and functions of effective leaders. **[16]**

Q7) What is Conflict? Explain process of conflict. **[16]**

Q8) Write explanatory notes on (Any Two): **[2 × 8 = 16]**

- a) Managing the Cultural Diversity.
- b) Features of Total Quality Management.
- c) Styles of Leadership.



Total No. of Questions : 5]

SEAT No. :

P950

[4768] - 202

[Total No. of Pages : 4

B.C.A.

**ELEMENT OF STATISTICS
(2008 Pattern) (Semester - II)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *All questions carry equal marks.*
- 4) *Use of statistical table and calculator is allowed.*
- 5) *Symbols and abbreviations have their usual meanings.*

Q1) Attempt any four of the following:

[4 × 4 = 16]

- a) What are the merits and demerits of Arithmetic mean?
- b) Explain the scope of statistics in management sciences.
- c) A set of 10 values has arithmetic mean 20. Find the arithmetic mean if each value is
 - i) doubled
 - ii) increased by 5 and then doubled
 - iii) each value is decreased by 5
 - iv) increased by 3.

- d) Compute standard deviation of the following grouped frequency distribution:

Weight (in kg)	30-40	40-50	50-60	60-70	70-80
No. of Students	3	5	12	20	10

- e) Find 4P_2 , 6C_2 , 8P_2 , 6C_4
- f) What is the probability that a non-leap year will contains 53 Thursday.

P.T.O.

Q2) Attempt any four of the following:

[4 × 4 = 16]

- a) What are the advantages of sampling method over census method?
- b) Define the following terms with illustration:
 - i) Mutually exclusive events.
 - ii) Exhaustive events.
- c) Compute the values of:
 - i) 5P_2
 - ii) 9C_3
 - iii) 7P_6
 - iv) ${}^7P_2 \times {}^8C_2$
- d) Find the missing frequency from the following data, given that the median of marks is 23:

Marks	0-10	10-20	20-30	30-40	40-50
No. of Students	5	8	-	6	3

- e) Following is the frequency distribution of number of students according to the marks scored in certain examination.

Marks	Below 20	20-40	40-60	60-80	80-100
No. of Students	15	24	32	10	8

answer the following questions:

- i) State the type of classification.
 - ii) Class width of second class.
 - iii) State the open end class.
 - iv) Number of students scoring marks more than 80.
- f) For asymmetric distribution if median = 72, mean = 78 find mode.

Q3) Attempt any four of the following:

[4 × 4 = 16]

- a) Explain the scope of statistics in Management sciences.
- b) What are the requirements of good measure of central tendency?
- c) If $P(A) = 0.3$, $P(B) = 0.4$, $P(A \cup B) = 0.5$ then find $P(A' \cap B')$, $P(A \cap B)$.
- d) Two cards are drawn at random from the pack of 52 cards. What is the probability that:
 - i) both are face cards.
 - ii) both are red cards.
- e) Arithmetic mean and S.D. of 12 items are 22 and 3 respectively. Later on it was found that the item 32 wrongly taken as 23. Find the correct mean and S.D.
- f) Find the Geometric Mean for the following data : 2, 8, 20, 62, 54.

Q4) Attempt any four of the following:

[4 × 4 = 16]

- a) What is dispersion? Explain absolute and relative measure of dispersion.
- b) What is classification? Explain inclusive and exclusive classification.
- c) A group of 50 items have mean and S.D. 61 and 8 respectively. Another group of 100 items have mean and S.D. 70 and 9 respectively. Find the mean and S.D. of combined group.
- d) The probability that a contractor will get a plumbing contract is 0.4 and the probability that he will get an electric contract is 0.3. If the probability of getting atleast one contract is 0.6 then find the probability that he will get both the contract?
- e) Write note on 'C' chart.
- f) Let A and B be any two events defined on sample space Ω . If $P(A) = \frac{1}{4}$, $P(B/A) = \frac{3}{4}$, $P(A/B) = \frac{1}{4}$ then prove that $P(A'/B') = \frac{3}{4}$

Q5) Attempt any two of the following:

[2 × 8 = 16]

- a) Construct np-chart for the following data and state your conclusions;
(for sample size 200)

Sample No.	1	2	3	4	5	6	7	8	9	10
No. of defectives	18	36	48	21	21	33	9	33	24	12

- b) Construct Average and Range Chart for the following data:

Sample No.	1	2	3	4	5	6	7	8	9	10
\bar{X}	14.2	13.9	15.5	12.1	14.1	13.2	12.9	13.5	13.1	12.8
R	2	2.5	2.8	2.5	3	1.9	2.1	3.9	3.1	2.1

(Given that for $n = 5$, $A_2 = 0.577$, $D_3 = 0$, $D_4 = 2.115$)

- c) Prices (in Rs.) of a particular commodity in 5 years in two cities are given below:

Prices in city Pune	20	22	19	23	26
Prices in city Mumbai	10	20	18	12	15

Which city has more stable prices? Why.



Total No. of Questions : 4]

SEAT No. :

[Total No. of Pages : 4

P951

[4768] - 203

F.Y. B.C.A.

**(213) 'C' PROGRAMMING
(2008 Pattern) (Semester - II)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt any ten of the following:

[10 × 2 = 20]

- a) "Data type of all elements in an array must be same" state whether True/False and justify your answer.
- b) What is the use of `strcat ()`.
- c) What is Masking?
- d) Give the syntax and use of `fopen ()`.
- e) Define Preprocessor.
- f) What is the difference between array and structure.
- g) Give the syntax of declaring pointer.
- h) List the difference between `get c ()` and `put c ()`.
- i) List the different file opening modes.
- j) What is the significance of `arg c?`
- k) Define string. Give the syntax of declaring a string.
- l) List the different Bitwise operators.

P.T.O.

Q2) Answer the following (Any four):

[4 × 5 = 20]

- a) Define structure. Explain how to declare and initialize a structure with example.
- b) Write a short note on Macro substitution directive.
- c) Explain syntax and use of:
 - i) fprintf()
 - ii) fscanf()
- d) What is DMA. Explain malloc () and free () .
- e) Explain method of passing array to function.

Q3) Attempt the following (Any four):

[4 × 5 = 20]

- a) Write a 'C' program to accept 10 numbers from the user and print its average.
- b) Write a 'C' program to find length of string without using standard library function.
- c) Write a 'C' program to accept details of 10 items as item no, name, cost. Display items in ascending order of cost.

(using structures).
- d) Write a 'C' program to accept 10 nos from user. Check if number is positive if it is then store the number in the file.
- e) Write a 'C' program to find transpose of a matrix.

Q4) Attempt the following (Any four):

[5 × 4 = 20]

Note : Find output and justify your answer.

- a) main ()
 {
 int b[25];
 b[0] = 100;
 b[24] = 200;
 printf (“ %d %d,” *b, *(b+24) + * (b+0));
 }
- b) main ()
 {
 struct
 {
 int num;
 float f;
 char mess [50];
 } m;
 m.num = 1;
 m.f = 3.14
 strcpy (m.mess, “Everything looks rosy”);
 printf (“%d %f %s\n”, m.num, m.f, m.mess);
 }
- c) main ()
 {
 char ch[20];
 int i;
 for (i = 0; i < 4; i ++)
 *(ch + i) = 67;
 *(ch + i) = ‘\0’;
 printf(“%s”, ch);
 }

d) # define IS LOWER (a) (a >= 97 && a <= 127)

define TOUPPER (a) (a-32)

main ()

{

char ch = 'c';

if (ISLOWER(ch))

ch = TOUPPER (ch);

printf("%c", ch);

}

e) main ()

{

static char str 1 [] = "dills";

static char str 2 [20];

static char str 3 [20]="Daffo";

int K;

K = strcmp (strcat (str3, strcpy (str2, str1)), "Daffodills");

printf("k = %d", k);

}



Total No. of Questions : 5]

SEAT No. :

P952

[4768] - 204

[Total No. of Pages : 3

F.Y. B.C.A.

**214 : FILE STRUCTURE AND DATABASE CONCEPTS
(2008 Pattern) (Semester - II)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt any four:

[4 × 4 = 16]

- a) List types of File organization techniques? Explain any one in detail.
- b) Explain Data abstraction.
- c) Write a short note on ISAM.
- d) Enlist various DML Commands and explain any one in detail with example.
- e) What is Normalization? Explain its different types.

Q2) Attempt any Four:

[4 × 4 = 16]

- a) Explain Network model with example.
- b) Define the term
 - i) Super key
 - ii) Natural Join
- c) Write short note on Dense Index.
- d) Enlist various users of DBMS and specify their Roles.
- e) What do you mean by Insertion and Deletion Anomalies in Normalization.

P.T.O.

Q3) Attempt any Four of the following:

[4 × 4 = 16]

- a) What is File? Explain file structure.
- b) What are Intersection and project operations in Relational Algebra? Discuss with the help of example.
- c) What is Attributes? Explain its types in detail.
- d) Explain advantages and disadvantages of Relational Database.
- e) Explain Insertion operation of B⁺ tree Index structure.

Q4) Attempt the following:

[16]

Consider the following entities and their relationship

politician (pno, pname, pdesc, constituency)

party (pcode, partyname)

politician and party are related with many-to-one relationships-create a RDB in 3NF and solve the following queries using SQL [any Five]

- a) List all the politicians of the party 'NCB'.
- b) Display the total number of politician in each party for "Pune" constituency.
- c) Add 'pjdate' column to politician table.
- d) Insert a row in politician table.
- e) Display party name of politician "Ramesh Joshi".
- f) Count the no. of politicians of party name "BSM".

Q5) Attempt the following:

a) Consider a trucking company which is responsible for picking up shipments for warehouses of a retail chain and delivery the shipments to the individual store location. A truck may carry several shipments in a single trip and deliver it to multiple stores. **[8]**

i) Identify all entities.

ii) Identify all relations.

iii) Draw E-R Diagram

b) Consider Relational Database **[8]**

Student (Sno, Sname, Sbdate, class)

Course (cno, cname)

Results (Sno, Cno, grade)

Write Relational Algebraic expression for the following:

i) List out student names who have secured grade 'A' in course 'DBMS'.

ii) Find out the grades of students 'Ram' along with course name.

iii) Display course detail for students 'Ramesh Modi'.

iv) List the student details enrolled for 'BCA' course.



Total No. of Questions : 5]

SEAT No. :

P953

[4768] - 205

[Total No. of Pages : 3

B.C.A.

COST ACCOUNTING

(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figure to the right indicate full marks.*

Q1) a) Fill in the blanks: (Any Five) [5]

- i) AT Breakeven point Sales is equals to _____ .
- ii) Advertisement Expenditure is a part of _____ overheads.
- iii) Aggregate of all the direct cost is known as _____ .
- iv) Wages paid to factory supervision is the example of _____ labour.
- v) _____ is the application of costing & cost accounting principles.
- vi) _____ budget covers all the budgets.

b) Indicate whether the following Statements are true or false: (Any Five):[5]

- i) Cost Accountancy is the application of costing & cost accounting Principles.
- ii) All indirect expenses are called as overheads.
- iii) A cost Unit is a location, person or item of equipment for which cost may be ascertained & used for the purpose of control.
- iv) In iron & steel industries 'kilometre' is the cost unit.
- v) Job costing is concerned with the cost of an individual job or batch irrespective of the time required for production.
- vi) A budget is presented in financial and / or quantitative terms.

P.T.O.

Q2) What is Cost? How would you classify the Cost? Give suitable Examples.[15]

OR

Explain Concept of Cost, Costing, Cost Accounting and Cost Accountancy.
State advantages of Cost Accounting.

Q3) Write short notes : (Any Three): [15]

- a) Features of Job Costing.
- b) Cost Unit and Cost Centre.
- c) Objectives of Budgetary Control.
- d) Labour Variances.
- e) Margin of Safety.

Q4) Prepare a statement of Cost from the following information relating to Lucky traders, Gujarat for the year ended 31.3.2013. [16]

	Rs.
Cost of direct material	2,00,000
Sales	4,00,000
Direct wages	1,00,000
Office Indirect materials	5,000
Cost of special patterns	40,000
Postage and telegrams	2,000
Factory rent and Insurance	5,000
Outstanding chargeable expenses	2,000
Carriage outward	2,500
Interest on loan	2,150
Printing and stationary	500
Factory Indirect wages	3,000
Selling on cost	4,000
Travelling salesman's salary	4,000
Factory indirect material	1,000
Royalties	8,000
General works overheads	2,000
Bad debts written off	1,000

Also calculate the percentage of profits earned to sales.

Q5) a) Following are the particulars of Bajaj Limited: **[12]**

Sales : Rs. 1,50,000/-

Marginal Cost :- Rs. 1,20,000/-

Gross Profit: - Rs. 60,000/-

Fixed Overheads:- Rs. 20,000/-

Net Profit :- Rs. 40,000/-

You are required to calculate:-

- i) P/V ratio
 - ii) BEP (Sales)
 - iii) Margin Of Safety.
 - iv) Net Profit when sales are Rs. 4,00,000/-
- b) From the following data of 60% activity of Ganga Ltd, Prepare a flexible budget for the production at 80% & 100% activity.

Material Rs. 100 Per Unit

Labour Rs. 40 Per Unit

Expenses (Direct) Rs. 10 Per Unit

Factory expenses Rs. 40,000 (40% fixed)

Administrative expenses Rs. 30,000 (60% fixed)

At 60% activity Production is 60,000 Units at 80% activity production is 8000 units & at 100% capacity Production is 10,000 units. **[12]**

OR

- b) Following is the data given for Pratap Enterprises. The standard quantity and standard price of raw materials required for 1 unit production is given below. **[12]**

Material (Kg)	Standard Quantity (Rs.)	Standard Price
Material Y	4	2

Actual production for an output of 500 units:

Material (Kg)	Actual Quantity (Rs.)	Actual Price
Material Y	1800	2.20



Total No. of Questions : 5]

SEAT No. :

P954

[4768] - 301

[Total No. of Pages : 5

S.Y. B.C.A

**321: NUMERICAL METHODS
(2008 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of calculator is allowed.*
- 4) *Neat diagrams must be drawn whenever necessary.*

Q1) a) Attempt any ONE of the following: **[6]**

- i) Use Newton-Raphson method to obtain a root in $(-3, -2)$ of the equation $x^3 + 3x^2 - 3 = 0$ correct to three decimal places.
- ii) Obtain a root of equation $x^3 - 4x - 9 = 0$ correct to two decimal places by using bisection method.

b) Attempt any TWO of the following: **[10]**

- i) Differentiate $y = (x^2 + 2)^5 + (3x^4 - 5)^4 - (3x^5 - 6x^2 + 9)$
- ii) Evaluate $\int (x^2 + 2x)^2 (x + 1)^3 dx$.
- iii) Evaluate $\lim_{x \rightarrow 1} \frac{x^3 - 1}{x - 1}$.

P.T.O.

Q2) a) Attempt Any ONE of the following: [6]

- i) Use Lagrange's interpolation formula to find $\sqrt{155}$ by using following table:

x	150	152	154	156
$y = \sqrt{x}$	12.247	12.329	12.410	12.490

- ii) Show that $E \equiv 1 + \Delta$ and $E^{-1} \equiv 1 - \nabla$.

b) Attempt any TWO of the following: [10]

- i) The table below gives the values of $\tan x$. Find $\tan(0.26)$.

x	0.10	0.15	0.20	0.25	0.30
$\tan x$	0.1003	0.1511	0.2027	0.2553	0.3093

- ii) Using Lagrange's interpolation formula, find the form of the function $f(x)$ from the following data:

x	0	1	3	4
$f(x)$	-12	0	12	24

- iii) Use Newton's forward difference formula to find the sum

$$S_n = 1+2+3+\dots+n.$$

Q3) a) Attempt any ONE of the following: [6]

- i) Find the values of a and b so that $y = a + bx$ fits the data in the following table:

x	0	1	2	3	4
y	1.0	2.9	4.8	6.7	8.6

- ii) Find the values of a , b and c so that $y = a + bx + cx^2$ is the best fit to the data:

x	0	1	2	3	4
y	1	0	3	10	21

- b) Attempt any TWO of the following: [10]

- i) Use Euler's method to solve differential equation $y' = -y$ with initial condition $y(0) = 1$ at $x = 0.02, 0.04$ by taking $h = 0.02$.
- ii) Use Picard's method to find two approximations of solving equation $\frac{dy}{dx} = x + y^2$, subject to conditions $y = 1$ when $x = 0$.
- iii) If $f(0) = 0, f(1) = 0, f(2) = 6, f(3) = 24, f(4) = 60$. By using Newtons forward interpolation formula find value of $f(1.5)$.

- Q4)** a) Attempt any ONE of the following: [6]

- i) Find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ of the data function at $x = 3$.

x	1	2	3	4	5
y	4	9	16	25	36

- ii) Use Runge-Kutta second order formula to approximate y when $x = 0.1$ and $x = 0.2$. Given that $x = 0$ when $y = 1$, for $\frac{dy}{dx} = x+y$.

b) Attempt any TWO of the following.

[10]

i) Find $\int_1^6 f(x) dx$ by Simpson's 1/3 rule for the function.

x	0	1	2	3	4	5	6
y	5	6	9	14	21	30	32

ii) Evaluate $\int_0^6 (x^2 + 2) dx$ by trapezoidal rule take $h = 0.5$.

iii) Determine the value of y when $x = 0.1$ by Euler's modified method.

Given $y(0) = 1$ for $\frac{dy}{dx} = x^2 + y$. Take $h = 0.1$.

Q5) a) Attempt any one of the following:

[6]

i) Explain terms.

1) Feasible region.

2) Optimum solution.

ii) Solve following Linear programming problem by graphical method.

minimize $z = 5x + 8y$

subjected to $x + y \geq 5$

$$x \leq 4$$

$$y \geq 2$$

$$x, y \geq 0.$$

b) Attempt any two of the following. [10]

- i) A manufacture produces bicycles and scooters, processed through two machines A and B. Availability of A and B and the time required to manufacture 1 bicycle and 1 scooter on machines A and B is given below.

Machine	A	B	Profit per unit
Bicycle	6	3	45
Scooter	4	10	55
availability	120	180	

Formulate this problem as linear programming problem to maximize the profit.

- ii) Obtain the initial basic feasible solution to the following transportation problem by using vogels approximation method.

	Q ₁	Q ₂	Q ₃	Supply
P ₁	10	6	3	9
P ₂	4	7	8	28
P ₃	9	8	6	20
P ₄	5	7	9	18
	25	25	25	

- iii) Determine the schedule of assignment of task to machine so that the total machine hours required to complete the task is the least.

Machine \ task	Q ₁	Q ₂	Q ₃	Q ₄
P ₁	51	77	49	55
P ₂	32	34	59	68
P ₃	37	44	70	54
P ₄	55	55	58	55



Total No. of Questions : 5]

SEAT No. :

P955

[4768] - 302

[Total No. of Pages : 3

B.C.A

**322: DATA STRUCTURE USING C
(2008 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions carry equal marks.*

Q1) Attempt Any Eight of the following:

[8×2 = 16]

- a) What is Composite Data?
- b) Why stack is called LIFO structure?
- c) What is Complete Binary tree?
- d) What are the different types of Queue?
- e) What is difference between structure and Polynomial?
- f) What is balance factor? How it is calculated?
- g) List the advantages of Dynamic Memory Allocation.
- h) What is efficiency of Linear Search Method?
- i) What is Graph? How it is represented?
- j) How to calculate indegree and outdegree of a node in graph?

P.T.O.

Q2) Attempt Any Four of the following: [4×4 = 16]

- a) Write an algorithm for evaluation of Postfix expression.
- b) Explain different types of tree traevering techniques.
- c) Explain BFS with an example.
- d) Write a function to remove given node of singly linked list and add it at the beginning.
- e) Write a function to display odd positions nodes from singly linked list.

Q3) Attempt Any Four of the following: [4×4 = 16]

- a) Explain Merge sort technique with an example.
- b) Write a function which compares the contents of two queues and display message accordingly.
- c) What is singly circular linked list? Explain its node structure.
- d) Write a function for intersection of two singly linked lists.
- e) Explain different types of asymptotic notations in details.

Q4) Attempt any four of the following: [4×4 = 16]

- a) Explain different types of dynamic memory allocation functions.
- b) Sort following data by using Selection sort techniques:
45,78,2,89,9,33,66,11,8
- c) Write a function for concatanation of two singly linked list.
- d) Compare Stack with Queue.
- e) Explain Binary Search Method with an example.

Q5) Attempt any four of the following:

[4×4 = 16]

- a) Write a “C” program for evaluation of two polynomials.
- b) Write a C program to accept the details of student (rno sname, per) and display it. (use Dynamic memory allocation).
- c) Explain DFS with an example.
- d) Construct Binary Search tree for Following Data:
Jan, Oct, Dec, Nov, Feb, Mar, Apr, Sept, May, Jul, Jun, Aug.
- e) What is an algorithm? Explain its characteristics in details.



Total No. of Questions : 5]

SEAT No. :

P956

[4768] - 303

[Total No. of Pages : 3

S.Y.B.C.A

**SOFTWARE ENGINEERING
(2008 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions carry equal marks.*

Q1) Attempt the following: (Any eight)

[16]

- a) Define the elements of a system.
- b) State any two advantages of data dictionary.
- c) Define Module.
- d) What is stress testing?
- e) Define coupling.
- f) What do you mean by a Questionnaire?
- g) State the Mc Call's quality factors (any 2).
- h) Define the term Entity.
- i) Give all the symbols used in DFD.
- j) What is S/W Testing?

P.T.O.

Q2) Answer the following: (Any Four)

[16]

- a) Explain the prototype model in detail.
- b) Explain any two roles of system analyst in detail.
- c) Explain Test characteristics in detail.
- d) Explain the concept of feasibility in detail.
- e) Explain S/W characteristics in detail.
- f) Give the drawbacks of waterfall model.

Q3) a) Design an I/P screen layout for Employees salary slip.

[8]

b) Sales tax is levied to customers based on the following conditions: **[8]**

- i) If customer is from Maharashtra and has sales tax exemption certificate then no sales tax is levied.
- ii) If the customer is from Maharashtra but does not have sales tax exemption certificate then 8% sales tax is levied.
- iii) If customer is out of Maharashtra 4% central sales tax is levied.
Draw a Decision tree and Decision table for the above case.

Q4) Write short notes: (Any four)

[16]

- a) White Box testing.
- b) SRS documentation.
- c) Types of Modules.
- d) Software verification and validation.
- e) Types of system.

Q5) Consider a system for “Gym management” applicants fill form containing details like name, DOB, category (Regular, sports, special). I card is issued to all the gym members. Batches and trainers are allotted to the members according to availability. **[16]**

- a) Identify all Entities.
- b) Draw context level DFD.
- c) Draw 1st level DFD.



Total No. of Questions : 5]

SEAT No. :

P957

[4768] - 304

[Total No. of Pages : 4

B.C.A

324: MANAGEMENT ACCOUNTING

(2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Use of calculator is allowed.*

Q1) Define the term 'Management Accounting'. State its objectives and functions. **[16]**

OR

Q1) Explain the concept of 'Working Capital'. State the causes of changes in working capital. Also state the various sources of working capital. **[16]**

Q2) Write notes on: **[16]**

- a) Trend Analysis.
- b) Common size statement.

OR

Q2) You have been furnished with the financial information of AB Ltd. For the year 2013-14.

P.T.O.

Statement of profit for the year ended 31st March, 2014

	₹
Sales	8,00,000
Less: Cost of Goods sold	<u>6,08,000</u>
Gross profit	1,92,000
Less: Operating Exps.	<u>1,00,000</u>
Net profit	92,000
Less: Taxes	<u>22,000</u>
Net profit after Taxes	<u>70,000</u>

Balance sheet as on 31st March, 2014

Liabilities	₹	Assets	₹
Equity share capital (₹ .100 each)	2,00,000	Fixed Assets	2,00,000
Retained Earnings	36,000	Cash	22,000
Sundry creditors	31,000	Sundry Debtors	24,000
Bills payable	18,000	Stock	48,000
Other current Liabilities	32,000	Prepaid Insurance	2,000
		Other current Asset	21,000
	<u>3,17,000</u>		<u>3,17,000</u>

Calculate the following ratios:

- Current Ratio.
- Acid Test Ratio.
- Gross profit Ratio
- Net profit Ratio.

[16]

Q3) From the following data provided by M/s Alpha Ltd. estimate working capital requirements. **[16]**

- a) Estimated activity/operations for the year, 2,60,000 units. (52 weeks)
- b) Raw material remains in stock for 2 weeks and production cycle takes 2 weeks.
- c) Finished Goods remaining in stock for 2 weeks.
- d) 2 weeks credit is allowed by suppliers.
- e) 4 weeks credit is allowed to Debtors.
- f) Time lag in payment of Wages and overheads is 2 weeks each.
- g) Cash and Bank Balance to be maintained ₹ 25,000.
- h) Selling price per unit is as follows:
 - i) Raw material $33\frac{1}{3}\%$ of sales.
 - ii) Labour and overheads in the ratio of 6:4 per unit.
 - iii) Profit is at ₹ .5 per unit.

Assume that operations are evenly spread throughout the year. Wages and overheads accrue similarly. Manufacturing process requires feeding of material fully at the beginning. Degree of work-in-process is 50%. Debtors are to be estimated at selling price.

OR

Q3) Define 'Budget' and 'Budgetary control'. State its objectives and explain in brief the steps to be taken to introduce budgetary control system in business organisation. **[16]**

Q4) The following information is obtained from Akshay Ltd.

[16]

Particulars	₹
Sales (1,00,000 units)	1,00,000
Variable cost	60,000
Fixed cost	30,000

Calculate:

- P/V Ratio.
- Break Point at sales value.
- Profit when sales amounted to ₹ .1,40,000.
- Margin of safety.

OR

Q4) What is 'Fund Flow Statement'? Give the proforma of 'Fund Flow Statement' and 'Adjusted profit and loss A/c.' **[16]**

Q5) Write notes on: (Any Two)

[16]

- Types of Budget.
- Break Even Analysis.
- Cash flow statement.
- Scope of Management Accounting.



Total No. of Questions : 5]

SEAT No. :

P958

[4768] - 305

[Total No. of Pages : 5

S.Y.B.C.A

**325: RELATIONAL DATABASE MANAGEMENT SYSTEM
(2008 Pattern) (Semester - III)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt all.

[16]

- a) Give any two characteristics of RDBMS.
- b) What is cursor? Which are the various attributes of cursor?
- c) Give modes of trigger.
- d) List states of transaction.
- e) List types of serializability?
- f) What is deadlock?
- g) Define shrinking phase.
- h) Define:
 - i) redo
 - ii) undo

Q2) Attempt Any Four .

[16]

- a) Explain any two popular products of RDBMS.
- b) Write a note on explicit cursor.

P.T.O.

- c) Explain concurrent execution of transaction with the help of example.
- d) Explain validation based protocol.
- e) Explain log-based recovery.

Q3) Attempt Any Four.

[16]

- a) Explain procedure in PL/SQL.
- b) Explain while loop used in PL/SQL with proper example.
- c) What is schedule? Explain types of schedule.
- d) Explain different storage types.
- e) Explain checkpoint with the help of suitable example.

Q4) Attempt any four .

[16]

- a) Consider the following relational database:

Dept (dept _no, dept _ name)

Emp (emp_no, emp_name, designation, salary, dept_no)

Write a script using cursor to give raise in salary by 15% for all the employees earning less than 15000 and 19% for all employees earning more than or equal to 15000.

- b) Consider the following relational database:

Item (itemno, itemname, qty)

Supplier (supplierno, suppliername, address, city, phno)

i_s (itemno, suppliernumber, rate, discount)

Define a trigger before updation on discount field, if the difference in the old discount and new discount is greater than 15% raise appropriate message.

- c) Consider the following relational database:

Company (c_no, c_name, c_addr, c_city, c_share_value)

Person (p_no, p_name, p_addr, p_city, p_phone_no)

c_p (c_no, p_no, no_of_shares)

Write a function, which will take company name as parameter and will return count of persons who are shareholders of that company.

- d) Consider the following relational database:

Publisher (p_no, p_name, p_addr)

Book(book_no, book_name, price, p_no)

Write a procedure which will take publisher number as a parameter and display count of books published by that publisher.

- e) Write a package, which consists of one procedure and one function. Pass a number to procedure and print whether a number is positive or negative. Pass roll number of student to function and print percentage of that student. For this consider the following relation. Student (Roll_No, Name, Addr, Total, Per).

Q5) Attempt any four .

[16]

- a) Consider the following transactions. Give two non serial schedules that are serializable.

T ₀	T ₁
Read (X)	Read (Y)
X= X-70	Y=Y+10
Write (X)	Write (Y)
Read (Y)	Read (Z)
Y=Y+70	Z=Z-5
Write (Y)	Read (X)
	Write (Z)
	X=X-15
	Write (X)

- b) Consider the following transactions. Find out two non-serial schedules which is serializable.

T ₁	T ₂	T ₃
Read (X)	Read (Z)	Read (X)
Read (Z)	Z=Z+10	Read (Y)
X=X+Z	Write (Z)	Y=Y-X
Write (X)	Read (Y)	Write (Y)
	Y=Y+20	
	Write (Y)	

- c) Following is the list of events in an interleaved execution of transaction T₁, T₂, T₃ and T₄ assuming two phase locking protocol. Is there a deadlock? If yes which transactions are involve in deadlock.

Time	Transaction	Code
t ₁	T ₁	Lock(A,X)
t ₂	T ₂	Lock(C,S)
t ₃	T ₃	Lock(A,S)
t ₄	T ₄	Lock(C,S)
t ₅	T ₁	Lock(B,X)
t ₆	T ₂	Lock(C,X)
t ₇	T ₃	Lock(D,X)
t ₈	T ₄	Lock(D,S)

- d) The following is the list of events in an interleaved execution if transaction T_0 , T_1 , T_2 with two-phase locking protocol.

Time	Transaction	Code
t_1	T_0	Lock(A,X)
t_2	T_1	Lock(B,S)
t_3	T_0	Lock(A,S)
t_4	T_1	Lock(C,X)
t_5	T_2	Lock(D,X)
t_6	T_0	Lock(D,S)
t_7	T_1	Lock(C,S)
t_8	T_2	Lock(B,S)

Construct a wait for graph according to above request. Is there deadlock at any instance? Justify.

- e) Following are the log entries at the time of system crash?

[start-transaction, T_1]

[write-item, T_1 , B, 20,40]

[commit, T_1]

[checkpoint]

[start-transaction, T_3]

[write-item, T_3 , A, 15,20]

[start-transaction, T_2]

[write-item, T_2 , D, 20,30]

[commit, T_3]

[write-item, T_2 , C, 25,20] ← system crash.

If immediate update with checkpoint is used, what will be the recovery procedure?



Total No. of Questions : 5]

SEAT No. :

P959

[4768] - 306

[Total No. of Pages : 3

F.Y.B.C.A

327: PRINCIPLES OF PROGRAMMING AND ALGORITHM

(Old - 2004 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory and carry equal marks.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt the following.(Any 4)

[4×4 = 16]

- a) Define the term with example.
 - i) Constant
 - ii) Identifier
- b) Describe Relational operator in 'C'.
- c) Explain switch-case statement with example.
- d) What is variable? States the rules for naming the variables.
- e) Explain various loop controls used in 'C'.

Q2) Attempt the following: (Any 4)

[4×4 = 16]

- a) What is difference between call by value & call by Reference.
- b) What is 'C'? Explain in detail.
- c) What is Recursion? Explain its advantages.

P.T.O.

- d) List all Bitwise operator in 'C'.
- e) Explain Basic Data Types in 'C'.

Q3) Attempt the following: (Any 4)

[4×4 = 16]

- a) Write a difference between union & structure.
- b) Explain static storage class with example.
- c) Explain the following function with example.
 - i) `printf()`
 - ii) `scanf()`
- d) Explain the use and concept of Header file.
- e) Explain goto statement with an example.

Q4) Attempt the following: (Any 4)

[4×4 = 16]

- a) Write a 'C' program to calculate maximum and minimum of three numbers.
- b) Write a 'C' program to accept input from user and calculate sum of Fibonacci series.
- c) Write a program to display following pattern.
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
- d) Write a 'C' program to display factorial of a given number.
- e) Write a 'C' program to check whether the given number is 'armstrong' or not.

Q5) Trace the output (Any 4).

[4×4 = 16]

- a) `main ()`
`{`
`print f (“XYZ”);`
`print f (“\n”);`
`print f (“MNO”);`
`}`.
- b) `main ()`
`{`
`int a= 4, b = 6, c = 8;`
`int ans;`
`ans = (a>b) ? 100 = c;`
`print f (“%d”, ans);`
`}`.
- c) `main ()`
`{`
`int a = 300, b = 100;`
`print f (“%d”, (a>b)? a:b);`
`}`.
- d) `main ()`
`{`
`const int a;`
`a =140;`
`print f (“%d”, a);`
`}`.
- e) `main ()`
`{`
`int i = 3;`
`i = i ++;`
`print f(“%d”, i);`
`}`.



Total No. of Questions : 5]

SEAT No. :

[Total No. of Pages : 2

P960

[4768] - 401

S.Y.B.C.A

NETWORKING

(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Draw neat diagram whenever necessary.*

Q1) Solve any 3 of the following:

[3×5 = 15]

- a) Explain synchronous communication with diagram.
- b) What is Bridges? Explain its working.
- c) Explain OSI reference model with diagram.
- d) Define protocol. Explain its standards.

Q2) Solve any 3 of the following:

[3×5 = 15]

- a) Explain sky-wave propagation.
- b) What is Web-Server? Explain it.
- c) Define Ethernet. Explain its types.
- d) Explain working of co-axial cable.

Q3) Solve any 3 of the following:

[3×5 = 15]

- a) Explain types of Networks in detail.

P.T.O.

- b) Describe Benefits of Intranet.
- c) What are the functions of Network Interface Card (NIC)? Explain it?
- d) Explain connectionless services.

Q4) Solve any 3 of the following:

[3×5 = 15]

- a) Explain proxy server with its types.
- b) What is wireless fidelity. Explain it.
- c) Describe star & mesh topology in detail.
- d) Explain modes of communication.

Q5) Write short note on the following (any 4).

[4×5 = 20]

- a) Internet Information Server (IIS).
- b) Peer-to-peer network.
- c) Token Bus (IEEE 802.4).
- d) Applications of Network.
- e) Infrared waves.



Total No. of Questions : 5]

SEAT No. :

[Total No. of Pages : 3

P961

[4768] - 402

S.Y.B.C.A.

VISUAL BASIC

(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Give illustration wherever necessary.*
- 4) *Design proper GUI.*

Q1) Explain the following property settings: (Any Eight).

[8×2 = 16]

- a) Property used to set background image to form.
- b) Property used to set length of text box.
- c) Property used to set timer control.
- d) Property used to disable text box.
- e) Property used to add items in list box.
- f) Property used to set value of check box.
- g) Property used to set current path of folder of directory list box.
- h) Property used to draw rectangle from shape control.
- i) Property used to change size of image at run time.
- j) Property used to disable radio button.

P.T.O.

Q2) Answer the following: (Any four).

[4×4 = 16]

- a) Explain MDI and SDI briefly.
- b) Differentiate between combo box and list box.
- c) Explain integrated development environment (IDE).
- d) What are prefixes. Explain any 3 with example.
- e) What is implicit and explicit declaration. Explain with example.

Q3) Answer the following:(Any four)

[4×4 = 16]

- a) Write a program to check that given number is Armstrong number or not.
- b) Find even and odd numbers from given array.
- c) Write a program for substraction of 2 matrices.
- d) Write a VB program to display string operation like concatenation, upper case, lower case, trim.
- e) Write a menu driven program:
 - i) To display Area of Triangle
 - ii) To display Area of Square.

Q4) Answer in brief. (Any Two)

[2×8 = 16]

- a) Explain do-untill and untill-do looping structures used in VB with syntax and example.
- b) Write a VB program to accept the details of universities, like name, city, no_of_colleges, year_of_establishment and store that details into database. (Don't use standard control).

- c) What is event driven programming in VB. Explain one event of each from the following with example:
- i) Form
 - ii) Mouse
 - iii) Keyboard
 - iv) Button

Q5) Write short notes : (Any four).

[4×4 = 16]

- a) Data Report.
- b) Features of VB 6.0.
- c) Radio button.
- d) Drivelist Box.
- e) Explain steps to create msgbox with it's parameters.



Total No. of Questions : 5]

SEAT No. :

P962

[4768] - 403

[Total No. of Pages : 2

S.Y.B.C.A.

INVENTORY MANAGEMENT (SAD)

(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Attempt any eight of the following:

[8×2 = 16]

- a) What is an ordering cost?
- b) Define types of inventory.
- c) State various types of Incited emergencies.
- d) What is collusion theft?
- e) What is flow chart?
- f) Define reengineering.
- g) What is Business process?
- h) What is minimum level of stock?
- i) Define SKU.
- j) What is bar code symbologies?

P.T.O.

- Q2)** Attempt any four of the following: **[4×4 = 16]**
- a) With suitable diagram explain business continuity plan.
 - b) Explain taxonomy of CASE tools.
 - c) Explain reverse engineering to understand processing.
 - d) Discuss objectives of inventory management system.
 - e) Explain elements of bar code.
- Q3)** Attempt any two of the following. **[2×8 = 16]**
- a) Explain software reengineering process model with suitable diagram.
 - b) Why inventory system fail? How to fix them.
 - c) What is software maintenance? Explain it's types.
- Q4)** Attempt any four of the following. **[4×4 = 16]**
- a) A company uses annually 12,000 units of raw material costing Rs. 1.25 per unit. Placing each order cost Rs. 15 & the carrying cost 15% per year unit of the average inventory.
Find out
 - i) EOQ
 - ii) No. of orders
 - b) Explain Last In First Out method for pricing raw material with advantages & disadvantages.
 - c) Explain BPR model with suitable diagram.
 - d) How to monitor & control inventories?
 - e) State drawback of CASE Tool.
- Q5)** Write short notes : (Any four) **[4×4 = 16]**
- a) Theft.
 - b) Assessment.
 - c) Legal duties & responsibility of store keeper.
 - d) Selective Inventory control.
 - e) JIT.



Total No. of Questions : 6]

SEAT No. :

P963

[4768] - 404

[Total No. of Pages : 1

B.C.A.

HUMAN RESOURCE MANAGEMENT

(2008 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *Question No. 6 is compulsory.*
- 2) *Answer any four from the remaining.*
- 3) *Figures to the right indicate full marks.*
- 4) *Draw figures wherever necessary.*

Q1) What is HRM & Personnel Management? Differentiate between HRM & PM. **[15]**

Q2) What is 'Recruitment'? Explain in detail the sources of Recruitment. **[15]**

Q3) Define the term 'Performance Appraisal'. Explain the objectives & methods of 'Performance Appraisal'. **[15]**

Q4) Write note on following. **[15]**

- a) Employee Training.
- b) Management Development Programme.

Q5) What is 'Organisational Behaviour'? Explain the Approaches & Models of Organisational Behaviour. **[15]**

Q6) Write short notes (Any Four). **[20]**

- a) Challenges before HRM.
- b) Objectives of Human Resource Planning.
- c) Limitations of Performance Appraisal.
- d) Wage and Salary Administration.
- e) Profit sharing.
- f) Piece Rate system of wage payment.



Total No. of Questions : 5]

SEAT No. :

P964

[4768] - 405

[Total No. of Pages :4

S.Y.B.C.A.

**OBJECT ORIENTED PROGRAMMING USING C++
(Semester-IV) (2008 Pattern)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *All questions carry equal marks.*
- 4) *Assume suitable data, if necessary.*

Q1) Attempt any eight of the following:

[8×2=16]

- a) Define:
 - i) Data abstraction
 - ii) Data encapsulation.
- b) List any four new keywords added by 'C++' over 'C' language.
- c) What does this pointer point to?
- d) What are the applications of object oriented programming?
- e) What is virtual base class?
- f) What is difference between cin and getline?
- g) What is default constructor?
- h) What is difference between ios:: ate and ios:: app file mode parameters?
- i) What is friend function?
- j) List the visibility modifiers provided by C++.

P.T.O.

Q2) Attempt any four of the following:

[4×4=16]

- a) Explain function overloading with the help of suitable example.
- b) Explain memory allocation for objects in C++ with the help of suitable example.
- c) Explain rules of overloading operators in C++.
- d) Consider the following C++ class.
Class Employee
{ int Empid;
char name [20];
float salary;
float bonus;
public://member function
};
Calculate bonus by checking salary of employee
if salary >= 10000 bonus=20% of salary
if salary < 10000 bonus =10% of salary
- e) Write a C++ program to calculate area of rectangle. Use parameterized constructor to initialize values. Include necessary member functions.

Q3) Attempt any four of the following:

[4×4=16]

- a) Write a C++ class Department (dept_no, dept_name, dept_location, dept_city). Write member function to accept and display details of departments. (Use array of object).
- b) Write a C++ program to create base class student (roll_no, stud_name, class). Derive a class exam from student which includes marks of three subjects and then derive a class result from exam to calculate percentage. Write appropriate function for each class to generate result of student.
- c) Explain how exceptions are handled in C++.
- d) Explain different errors encountered during file handling in C++. Explain four functions used to handle errors, during file handling.

- e) Trace the output of the following program and explain it. Assume there is no syntax error.

```
# include <iostream.h>
int main()
{   int x=100;
    int & y=x;
    x=200;
    y=500;
    x=300;
    Cout <<x<<" " <<y--;
    return 0;
}
```

Q4) Attempt any four of the following: **[4×4=16]**

- a) Write a C++ program to calculate square and cube of a given number using inline function.
- b) What is destructor? Explain destructor with the help of suitable example.
- c) Define a C++ class string overload '==' operator to compare two string objects.
- d) Explain multiple inheritance with the help of suitable example.
- e) Explain pure virtual function with the help of suitable example.

Q5) Attempt any four of the following: **[4×4=16]**

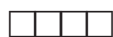
- a) Write a C++ program using class with two data members x&y. Write member functions to accept and display these two integers. Write a function to calculate who is largest integer from both.(Use nesting of member functions).
- b) Explain use of user defined manipulators with the help of suitable example.
- c) Write a note on function template.

- d) Write a C++ program which will accept n integers from user. Create two files called Positive. dat and Negative. dat, Program should store positive and negative integers in respective files.
- e) Trace the output of the following program and explain it. Assume there is no syntax error.

```
# include < iostream.h>
class base
{   public:
    virtual void basefun ( )
    {
        Cout <<“from base”;
```

```
    }
};
class deri: public base
{   public:
    void basefun( )
    {
        Cout<<“ from derived”;
```

```
    }
};
void somefun (base *obj)
{   obj → basefun ( );
}
int main( )
{   base baseobject;
    somefun (& baseobject);
    deri deriobjcet;
    somefun (& deriobject);
    return(0);
}
```



Total No. of Questions : 5]

SEAT No. :

P965

[4768] - 501

[Total No. of Pages :3

T.Y.B.C.A.

VB. NET PROGRAMMING

.Net Programming

(Semester-V) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions carry equal marks.*
- 3) *Draw suitable diagrams wherever necessary.*
- 4) *Design proper GUI.*

Q1) Attempt Any Eight of the following:

[8×2=16]

- a) Explain the printpreviewdialog control in dialog boxes function.
- b) List any two web server control in Asp. Net.
- c) What is data validation in VB.Net.
- d) Explain any two built in- date functions.
- e) What is CLS?
- f) State the difference between data set and data reader.
- g) What is exception?
- h) How to use MDI in VB. Net?
- i) Explain any two properties of Button Control.
- j) Enlist Namespaces in VB. Net.

Q2) Attempt the following (Any Four):

[4×4=16]

- a) Design GUI and write code for following in VB. Net (ADO. Net) without wizard:
 - Accept player-details like player-No, player -name, No- of -runs- Scored, No- of- times-out and save these details in players table.

P.T.O

- b) Design GUI and write code for the following in VB. Net.
- Add items to list box.
 - Remove selected item from list box.
- c) Design GUI and write code for the following in VB. Net.
- Accept a length & height in textbox.
 - Calculate area of rectangle.
 - Display result in Msg box.
- d) Differentiate between value type and reference type.
- e) Explain polymorphism in VB. Net.

Q3) Attempt the following(Any Four):

[4×4=16]

- a) Design GUI and write code for the following:
(ADO. Net) with wizard:
- Accept Item details like Item-No, Item-name, Item rate, Item- quantity and save these details in Item table.
- b) Design GUI and write code in VB. Net for the following.
- Accept two no. in two text boxes.
 - Display prime No. among them in message box.
- c) Explain any four data types with example.
- d) Explain Inheritance & types of Inheritance in VB. Net.
- e) Give difference between overloading and overriding.

Q4) Attempt the following (Any Four):

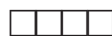
[4×4=16]

- a) What is destructor? Explain with example.
- b) Explain any four advantages of . Net framework.
- c) Enlist operators used for string concatenation with explanation.
- d) Write a program to calculate Fibonacci series of a given number using console application program.
- e) Design GUI and write a code for following in VB. Net using Richtextbox:
 - Change font color of selected text.
 - Change font size of selected text.
 - Exit.

Q5) Write short notes: (Any Four)

[4×4=16]

- a) ADo. Net Architecture.
- b) CLR features.
- c) Input Box.
- d) ASP. Net page life cycle Events.
- e) Satellite Assembly.



Total No. of Questions : 5]

SEAT No. :

P966

[4768] - 502

[Total No. of Pages :3

B.C.A.

INTERNET PROGRAMMING & CYBER LAW

(Semester-V) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicates full marks.*
- 3) *State assumptions wherever necessary.*

Q1) Solve any eight:

[8×2=16]

- a) Define cyber law.
- b) List the numeric functions used in JavaScript.
- c) What are the types of granularity?
- d) What is the use of `<embed>` tag?
- e) List any four text attributes used in CSS.
- f) Define sand boxing.
- g) What is mean by book keeping?
- h) What is tampering?
- i) List any two methods of server object used in ASP.
- j) What is the use of confirm dialog box in JavaScript?

Q2) Attempt any four of the following:

[4×4=16]

- a) Write an ASP code to print the details of employees living in 'Pune' city. The fields of employee table are empno, empname, salary, city.
(Use JavaScript)
- b) Write on ASP code to accept and stores the details of doctor (docno, docname , hospname). (Use JavaScript).
- c) Explain the structure of HTML program?
- d) Discuss various features added in Window 2000?
- e) What is an Array? Explain declaration initialization of an array in JavaScript?

P.T.O

Q3) Attempt any four of the following:

[4×4=16]

a) Write a HTML code to design the following output.

b) Write a HTML code to design the following output.

Player names

- Cricket.
 - 1) Sachin
 - 2) Dhoni
- Tennis.
 - 1) Saniya Mirza
 - 2) Sayana Nehval

c) Write a JavaScript program to print armstrong numbers between 1 to 1000.

d) Write a note on cyber Jurisprudence.

e) What are the advantage & disadvantage of e-banking?

Q4) Attempt any four of the following:

[4×4=16]

a) Write an ASP code to find factorial of a given number. (Use JavaScript).

b) Write an ASP code to delete the details of customer (cust_no, cust_name, mob_no) whose name starts with letter 'A'. (Use JavaScript).

c) What is the virus? Explain different types of viruses?

d) Explain RSA algorithm?

e) Explain different types of style sheets?

Q5) Attempt any four of the following:

[4×4=16]

- a) Discuss various standard HTTP headers?
- b) Explain different security functions provided by windows NT operating system?
- c) Write a JavaScript code to accept the pincode from user & validate it.
- d) Write a HTML code to design the following output.

User Registration details

User Id

First Name

Last Name

Address

Email-Id

Gender Male
 Female

Mobile No.

- e) Write HTML & CSS code to generate the following output.
(Use external style sheet).

Color Names:

- i) Red
- ii) Blue
- iii) Green
- iv) Pink
- v) Purple



Total No. of Questions : 5]

SEAT No. :

P967

[4768] - 503

[Total No. of Pages :1

T.Y.B.C.A.

PRINCIPLES OF MARKETING

(Semester-V) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw figures wherever necessary.*

Q1) Explain the importance and Functions of Marketing. [15]

OR

Explain product planning and development.

Q2) Explain the bases for market segmentation. [15]

OR

Explain the factors affecting the choice of a distribution channels.

Q3) Define Advertising. Explain the characteristics of Advertising. [15]

OR

Explain the concept and importance of Marketing Organisation.

Q4) Explain the different types of marketing Environment. [15]

OR

Explain the different methods of sale promotion.

Q5) Write short note on: (Any Four): [20]

- a) Traditional method of marketing.
- b) Brand name.
- c) Consumer behaviour.
- d) Retailer and wholesaler.
- e) Promotion Mix.
- f) Function Marketing Organisation.

Total No. of Questions : 5]

SEAT No. :

P968

[4768] - 504

[Total No. of Pages :2

B.C.A.

CORE JAVA

(2008 Pattern) (Semester-V)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Answer of sub-questions of each question should be attempted at one place. It should not be written separately.*

Q1) Attempt the following:

[2×8=16]

- a) “Can we override a constructor”? Comment.
- b) When sub class cannot access the super class properties?
- c) “Byte code is a machine dependent” true/ false. Justify.
- d) Name the class which is at the top of the exception class hierarchy.
- e) The java.io.File class can be used to read contents of a file. State true or false and justify?
- f) Which method is used to specify containers layout? Write its syntax.
- g) A class required to handle events on Menu and Checkbox. Which listeners should be implemented?
- h) Give syntax of two methods of StringBuffer class?
- i) List memory requirement for boolean type and char type in java.
- j) What is a difference between paint() and repaint().

Q2) Attempt the following (Any Four):

[4×4=16]

- a) What is an interface? How does it differ from an abstract class?
- b) What is AWT? Explain any four classes under java.awt package.
- c) Explain the purpose of checked and unchecked exception.
- d) Write an applet to draw simple temple.
- e) Create a class Birthdate with a parameterized constructor which takes three arguments-date, month and year. Raise an exception if the birth date is invalid.

P.T.O.

Q3) Attempt the following (Any Four): **[4×4=16]**

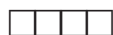
- a) Write a Java program using AWT to print “Welcome TYBCA” in Red colour. When we click on a button the text color should change it randomly.
- b) Write a Java program that displays the count of non-vowels in a given word using command line argument.
- c) What is an Applet? Explain its Lifecycle.
- d) What is an Array? How it differs from Vector?
- e) What is Layout Manager? Explain any one in detail.

Q4) Attempt the following (Any Four): **[4×4=16]**

- a) What is Package? Explain steps to create Package.
- b) Explain wrapper classes.
- c) Comment “Class is logical and object is physical representation of an Entity”.
- d) Create a Package Vehicle, which will have two classes- two wheeler and four wheeler. Two wheeler with method disp (cc, price), four wheeler with method show(regno, reg. year).
- e) Write a java program which demonstrate any four string function.

Q5) Attempt the following (Any Four): **[4×4=16]**

- a) Describe various forms of Implementing Interface. Give example of each case.
- b) Differentiate between Swing and AWT.
- c) State different uses of Super Keywords? Explain with suitable examples.
- d) Write a program to get a file name from command prompt. Check whether a file by given name exists. If file is a regular file then display various details about that file. But if it is directory then display the number of files in that directory.
- e) Write a Java program to accept ‘n’ elements from user and display it in ascending order. (Using Command Line Arguments).



Total No. of Questions : 7]

SEAT No. :

[Total No. of Pages :1

P969

[4768] - 601

T.Y.B.C.A. (Semester-VI)

E-COMMERCE

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *Q. No. 7 is compulsory.*
- 2) *Answer any four from remaining.*

Q1) What is E-commerce? Discuss main activities of E-commerce. **[15]**

Q2) Define internet. Describe reasons for building own website. **[15]**

Q3) Describe concept of intranet. Discuss the role of intranets in B2B application. **[15]**

Q4) What is meant by modern payment system? Compare traditional & modern payment system. **[15]**

Q5) Define E-commerce planning. How to link objectives to business strategies? **[15]**

Q6) What is internet marketing? With a suitable diagram describe E-cycle of internet marketing. **[15]**

Q7) Write short notes (Any Four): **[20]**

- a) B2G & B2C.
- b) Web promotion.
- c) Credit card.
- d) Shopping Bots.
- e) E-Governance.
- f) PROS of online shopping.



Total No. of Questions : 5]

SEAT No. :

P970

[4768] - 602

[Total No. of Pages :2

B.C.A.

**MULTIMEDIA SYSTEMS
(2008 Pattern) (Semester-VI)**

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Draw diagrams wherever necessary.*

Q1) Answer in short (any eight):

[16]

- a) Digital signals.
- b) BMP Files.
- c) Wavelength.
- d) Flowline.
- e) D.V.D.
- f) Multimedia component list.
- g) S. Video.
- h) MIDI
- i) Animation.
- j) Modes & links.

Q2) Answer the following (any four):

[16]

- a) Define RAID and its levels.
- b) Differentiate hypertext and hypermedia with example.
- c) Explain synthesizer and its use in multimedia.
- d) Explain Graphics/ Image data structure.
- e) Explain application of Multimedia in communication.

P.T.O

Q3) Answer the following (any four): **[16]**

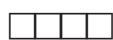
- a) Explain magnetic storage device with example.
- b) Which are different sound I/P and O/P ports?
- c) Describe MIDI files in detail.
- d) Explain Multimedia Development Life Cycle.
- e) Explain guidelines for visual elements.

Q4) Answer the following (any four): **[16]**

- a) Explain GM1 and GM2.
- b) Explain digital audio tape.
- c) Explain four differences between CD & DVD.
- d) Explain PAL in detail.
- e) Explain any two graphics software tools.

Q5) Write short note on (any four): **[16]**

- a) Channel messages.
- b) Types of storyboard.
- c) HD.TV.
- d) DAC
- e) Sampling.



Total No. of Questions : 5]

SEAT No. :

P971

[4768] - 603

[Total No. of Pages :3

T.Y.B.C.A.

INTRODUCTION TO SYSTEM PROGRAMMING

AND OPERATING SYSTEMS

(Semester-VI) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn wherever necessary.*

Q1) Attempt Any Eight of the following:

[8×2=16]

- a) List the basic computing resources for the system.
- b) Define the term backing store.
- c) Define claim edge in resource allocation graph.
- d) Define system program.
- e) Why page table is used?
- f) Define process.
- g) Define preemptive.
- h) Define physical address.
- i) Explain command Interpreter.
- j) Define semaphores.

Q2) Attempt any four of the following:

[4×4=16]

- a) Explain in detail implementation of segment table.
- b) Define file: List and Explain file attributes in detail.
- c) List and Explain system calls related to file manipulation.
- d) Explain reader's writer's problem of synchronisation.
- e) Calculate Average Turn Around Time and Average Waiting Time for all set of processes using pre-emptive shortest job first algorithm.

Process	Burst time	Arrival time
P1	6	0
P2	2	1
P3	1	2
P4	5	3
P5	7	2

P.T.O

Q3) Attempt any four of the following:

[4×4=16]

- a) List and explain the scheduling criteria.
- b) Explain multiprogramming system in detail
- c) Explain direct access method of file.
- d) What is deadlock? Explain deadlock recovery in detail.
- e) Consider the following page reference string:-

5, 4, 3, 2, 5, 4, 6, 5, 4, 3, 2, 6,

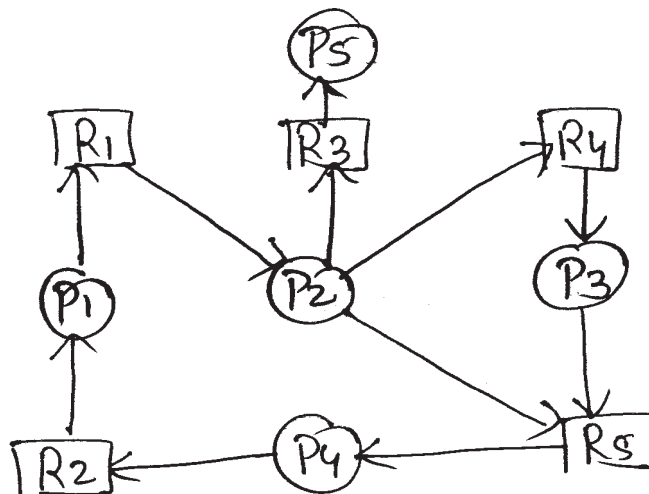
The number of frames is 3. Show page trace and calculate page faults for the following page replacement schemes:

- i) LFU
- ii) FIFO

Q4) Attempt any four of the following:

[4×4=16]

- a) Explain locality model.
- b) Explain contiguous allocation method in detail.
- c) Explain resident monitor.
- d) Explain with diagram multilevel feed back queue scheduling.
- e) What is wait for graph? convert following resource allocation graph into wait for graph.



Q5) Attempt any four of the following:

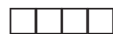
[4×4=16]

- a) Explain queuing diagram which represent process scheduling.
- b) Write a note on memory compaction.
- c) List and Explain types of distributed system.
- d) Assume there are total 200 tracks that are present on each surface of the dist. If request queue is 68, 72, 5, 76, 132, 109, 124 and initial position of the head is 72. Apply C-SCAN disk scheduling algorithm and calculate total head movement.
- e) Consider the following snapshot of system which has 4 processes and four resources.

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	2	2	0	0	2	2	2	5	2	0
P1	1	2	0	0	1	9	5	0				
P2	2	4	5	4	3	4	5	6				
P3	1	0	1	4	1	6	5	6				

Answer the following questions using banker's Algorithm.

- i) What are the content of matrix need.
- ii) Is the system in a safe state?



Total No. of Questions : 5]

SEAT No. :

P972

[4768] - 604

[Total No. of Pages :2

T.Y.B.C.A.

ADVANCE JAVA

(Semester-VI) (2008 Pattern)

Time : 3 Hours]

[Max. Marks : 80

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Answer of sub-questions of each question should be attempted at one place. It should not be written separately.*

Q1) Attempt the following (Any Eight)

[2×8=16]

- a) What is thread?
- b) Give two methods of cookie?
- c) Explain types of servlet.
- d) Define bean?
- e) Write the syntax of comments in JSP?
- f) Define setpriority () method?
- g) What is JDBC.
- h) What are the parameters of doget () method?
- i) What is Hashset?
- j) Define Vector?

Q2) Attempt any four of the following:

[4×4=16]

- a) Explain JDBC Architecture with suitable diagram?
- b) Explain properties of bean?
- c) Explain JSP Scripting Elements?
- d) Write a program which reads in a series of first name and stores them in a linked list. The program should not allow to store duplicate names.
- e) Write a servlet which counts how many times a user has visited a web page

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Q3) Attempt any four of the following: **[4×4=16]**

- a) Explain what is servlet? Explain its life cycle?
- b) Explain how thread is created in java?
- c) Explain stub and skeleton.
- d) Write JDBC that inserts a record in employee table. field emp-no, name and salary
- e) Write a program to create linked list of integer and do the following operations.
 - i) Add elements at last position.
 - ii) Delete the first element.

Q4) Attempt any four of the following: **[4×4=16]**

- a) Explain JSP directives with suitable example?
- b) What is cookie? Explain how cookie can be created and stored in servlet?
- c) Explain thread synchronization?
- d) Write JDBC program to delete a record from student table who belong to pune city.
- e) Create a thread which will display prime numbers after every 5 seconds.

Q5) Attempt any four of the following: **[4×4=16]**

- a) Differentiate between ArrayList and vector?
- b) Explain RMI Architecture with suitable diagram?
- c) Explain steps to create jar file?
- d) Write a program to create two threads thread 1 and thread 2 set the maximum priority to thread 2 and minimum priority to thread 1.
- e) Write servlet code to display greeting message to user as per server time.

