

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-101**

**B. C. A. ( Semester - I ) Examination - 2009**

**BUSINESS COMMUNICATION**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1) Explain Written Communication with its merits and demerits. [15]**

**OR**

**Q.1) What is Oral Communication ? Explain Medias of Oral Communication. [15]**

**Q.2) As a Sales Manager draft a sales letter for promoting sale of Motor Cars. [15]**

**OR**

**Q.2) Draft an application letter for the post of a Programmer in Zen Soft Pvt. Ltd alongwith resume. [15]**

**Q.3) What is Listening ? State and explain principles of Good Listening. [15]**

**OR**

**Q.3) Explain advantages and disadvantages of Group Discussion. [15]**

**Q.4) How will you overcome barriers of Communication ? Explain. [15]**

**OR**

**Q.4) Give hints to improve your Speaking Skills. [15]**

**Q.5) Write short notes : (Any Four)**

**[20]**

- (a) E-mail
  - (b) Meetings
  - (c) Teleconferencing
  - (d) Internet
  - (e) Fax
  - (f) Layout of Business Letter
-

**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 2**

**[3673]-102**

**B. C. A. ( Semester - I ) Examination - 2009**

**PRINCIPLES OF MANAGEMENT**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1)** Define Management. Management exhibits characteristics of both a Science and an Art. Comment.

**OR**

**Q.1)** Evaluate contribution of F.W. Taylor to the Development of Management Thought.

**Q.2)** What is Planning ? Explain planning activities at different levels of Management.

**OR**

**Q.2)** Write notes :

- (a) Organising Process
- (b) Leadership Styles

**Q.3)** Define Motivation. Explain Maslow's Need Hierarchy Theory.

**OR**

**Q.3)** What do you understand by Control ? Explain various Techniques of Control.

**Q.4)** Explain various social responsibilities of a Business.

**OR**

**Q.4)** Write notes :

- (a) Strategic Management
- (b) Resistance to Change

**Q.5)** Write short notes : (**Any Four**)

- (a) Total Quality Management
  - (b) Management of Crisis
  - (c) International Management
  - (d) Importance of Organisational Communication
  - (e) Nature of Direction
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Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-103**

**B. C. A. ( Semester - I ) Examination - 2009**

**PRINCIPLES OF PROGRAMMING AND ALGORITHM**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instruction :***

*Use ANSI C Method.*

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**Q.1) Answer the following : (2 marks each)**

**[12]**

- (a) Define an Algorithm.
- (b) What is the difference between 'a' and "a" ?
- (c) Explain function getchar with example.
- (d) Explain the term Scope of Variable.
- (e) Write down all logical operators available in C.
- (f) 'C' makes difference between float and double comment.

**Q.2) Answer the following : (Any Four)**

**[16]**

- (a) Explain different steps involved in program execution in C.
- (b) Explain bitwise operators with example.
- (c) Explain difference between DO-WHILE and WHILE LOOP with example.
- (d) Explain two methods of declaring constants.
- (e) Explain Call By Value and Call By Reference with example.

**Q.3) Attempt the following : (Any Four)**

**[16]**

- (a) Write a program for the following using switch case statement.

e.g. i/p 123

o/p One Two Three

- (b) Write a program to accept a number and find whether it is palindrome or not.

- (c) Write a 'C' program to generate the following pattern :

```
*   *   *   *
    *   *   *
      *   *
        *
```

- (d) Write a program to calculate  $x^y$ .

- (e) Write a program to find factorial of a given number.

**Q.4) Attempt the following : (Any Four)**

**[16]**

- (a) `main( )`

```
{
    int a = 500, b = 100, c;
    if(!a >= 400)
        b = 300
        c = 200;
    printf("b = %d c = %d", b, c);
} (Find the output)
```

- (b) `main( )`
- ```
{
    int i;
    for (i = 1; i++<=5; printf("%d", i));
}
```
- (Find the output)
- (c) `main( )`
- ```
{
    int x = 5
    x++;
    printf("x = %d\n", x);
    ++x;
    printf("x = %d\n", x);
}
```
- (Find the output)
- (d) Write an algorithm to calculate area of circle by taking radius as an input.
- (e) Draw a flowchart to find the greatest among three numbers a, b, c.

**Q.5) (A) Attempt the following : (Any Two) [10]**

- Define Recursion and give its advantages.
- What is Preprocessor ? Explain Macro Expansion.
- Discuss different storage classes used in C.

**(B) Attempt the following : (Any Two) [10]**

- Write a 'C' program which reads an integer and reverse its digits and print both.
- Write a program to accept a character. Display its ASCII Value and its next character.
- Write a program which will contain recursive function to generate given number of Fibonacci terms.

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-104**

**B. C. A. ( Semester - I ) Examination - 2009**

**COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

- (1) All questions are compulsory.*
  - (2) All questions carry equal marks.*
  - (3) Neat diagrams must be drawn wherever necessary.*
- 

**Q.1) Attempt any three of the following : [15]**

- (a) Explain different types of Programming Languages.
- (b) Explain important features of MS-Word.
- (c) Explain any five External DOS Commands.
- (d) How files and directories are organised in Linux ?

**Q.2) Attempt any three of the following : [15]**

- (a) State advantages and disadvantages of Flowchart.
- (b) Draw a flowchart to find greatest among three numbers.
- (c) Write an algorithm to print numbers in reverse order.
- (d) Draw a flowchart to check if given number is palindrom.

**Q.3) Attempt any three of the following : [15]**

- (a) Write a note on Vi Editor in Linux.
- (b) What is Memory ? Explain different types of Memories.
- (c) What are Wildcard Characters ? Explain Wildcard Character.
- (d) Explain Control Panel in Windows O.S.



**Q.4)** Attempt **any three** of the following : **[15]**

- (a) What is Spread Sheet ? Explain different types of Charts.
- (b) Define Operating System. Explain different types of Operating Systems.
- (c) Explain different permissions on a file in Linux.
- (d) Perform the following :
  - (i)  $(583)_{10} = (?)_8$
  - (ii)  $(29)_{10} = (?)_2$
  - (iii)  $(7B46)_{16} = (?)_8$
  - (iv)  $(127)_{16} = (?)_{10}$
  - (v)  $(48B)_{16} = (?)_{12}$

**Q.5)** Attempt **any four** of the following : **[20]**

- (a) Explain different types of Printers in detail.
- (b) Explain working of Plotters.
- (c) Explain different operations for MS-Word.
- (d) Explain the following terms :
  - (i) Toolbar
  - (ii) Control Box
  - (iii) Menus
  - (iv) GUI
  - (v) Taskbar
- (e) Write a Batch File that performs the following task :
  - (i) Display content of file XYZ.txt.
  - (ii) Rename abc file as PQR.
  - (iii) Display message and waits for user to press any key.
  - (iv) Copy content of hello.txt file to by.txt.
  - (v) Delete file LLM.txt.

**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 5**

**[3673]-105**

**B. C. A. ( Semester - I ) Examination - 2009**

**BUSINESS ACCOUNTING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

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**Q.1) (A) Fill in the blanks :**

**[05]**

- (a) The process of transferring entries from journal into ledger is termed as \_\_\_\_\_.
- (b) Balance Due to Bank represents bank \_\_\_\_\_.
- (c) Death of a Professional Manager does not have an impact on the Financial Accounts of a concern under the \_\_\_\_\_ concept.
- (d) A reduction allowed on the catalogue price of the goods is called \_\_\_\_\_.
- (e) The commodities in which a trader deals are known as \_\_\_\_\_.

**(B) Write the word, term or phrase which can substitute each of the following :**

**[05]**

- (a) All amounts payable by the business to outsiders.
- (b) Withdrawals of Cash or Goods by the proprietor from the business for personal use.
- (c) A cheque issued to safeguard interest of the drawer and drawee.

- (d) Reduction in the value of assets due to its continuous use.
- (e) Irrecoverable debts from book debts.
- (C) State whether the following statements are **true** or **false** : [05]
  - (a) Cash Purchases of Furniture are recorded in Bought Book.
  - (b) Cash Book is a journal as well as a Ledger.
  - (c) Returns from customers are to be recorded on the basis of debit notes received.
  - (d) The liabilities of a solvent person are always less than his assets.
  - (e) Excess of Income over Expenditure is called a deficit.
- (D) Classify the following accounts : [05]
  - (a) Prepaid Taxes Account
  - (b) Railway Sidings Account
  - (c) Loose Tools Account
  - (d) Bad Debts Account
  - (e) Dena Bank Loan Account

**Q.2)** What is 'Computerised Accounting System' ? Explain use of Computers in recording of Financial Transactions. [12]

**OR**

**Q.2)** Write short notes : (Any Three) [12]

- (a) Limitations of Financial Accounting
- (b) Business Entity Concept
- (c) Bank Reconciliation Statement
- (d) Horizontal Form of Company Balance Sheet
- (e) Generating Accounting Reports

**Q.3)** Journalise the following transactions in the books of Bata Co., Baroda for January, 2009 : **[16]**

- 1st Started business with Cash Rs. 5,000, Bank Balance Rs. 10,000 and Furniture worth Rs. 3,000.
- 8th Bought Goods from Bimal Rs. 3,000 @ 10% Trade Discount on credit.
- 12th Sold private car for Rs. 12,000 and invested the same into the business.
- 18th Deposited Rs. 2,500 into Current Account with Dena Bank.
- 21st Quarterly Life Insurance Premium paid @ Rs. 6,000 p.a. by crossed postal order.
- 23rd Remitted to Bedi Rs. 1,050 in full settlement of Rs. 1,150.
- 27th Bought Stationery of Rs. 230 for office use from Sapre Bros.
- 31st Invested Rs. 3,500 for purchase of Kisan Vikas Patra.

**Q.4) (A)** On 31st December, 2008 Bank Column of Cash Book showed a Debit Balance of Rs. 10,000. From the following particulars prepare a Bank Reconciliation Statement showing position as per Pass Book on 31st December, 2008 : **[08]**

- (1) Cheques paid into Bank but not credited before 31st December, 2008 amounted to Rs. 10,500.
- (2) Purchases of Shares from Bajaj Auto Ltd. of Rs. 2,000 by the Bank appeared in the Pass Book only.
- (3) Direct Deposit by the customer into the Bank Rs. 1,650 was recorded in the Pass Book only.
- (4) Cheques issued on 29th December, 2008 were presented for payment on 5th January, 2009 amounted to Rs. 4,000.
- (5) Bank charges of Rs. 50 and interest on investment of Rs. 900 were recorded only in the Bank Pass Book.

(B) Enter the following transactions of Dinesh Enterprises, Dombivali dealing in furnitures, in appropriate Subsidiary Book for March, 2009 : [08]

- 1st Bought 20 tables @ Rs. 150 each from Majestic Furnitures on credit @ 12% Trade Discount.
- 4th Purchased three dozen chairs @ Rs. 50 each from Metro Furnitures @ 5% Trade Discount.
- 12th Modern Furnitures supplied secondhand furniture for Rs. 1,200 @ Rs. 50 Trade Discount.
- 19th Bought two dozen wooden cots @ Rs. 850 each from Maharashtra Furnitures @ 50% Trade Discount.
- 24th Purchased one dozen computer tables @ Rs. 425 each on credit @ 4% Trade Discount from Maharaja Furnitures.
- 31st Purchased one dozen wooden benches @ Rs. 550 each less Trade Discount of Rs. 1,596 from Dombivali Furniture Mart.

**Q.5)** The following balances were extracted from the books of Girish Godbole, Gondia as on 31st March, 2009. Prepare a Trading and Profit and Loss Account for the year ended 31st March, 2009 and the Balance Sheet as on that date after taking into account the following adjustments : [16]

**Trial Balance as on 31st March, 2009**

<b>Particulars</b>	<b>Debit Rs.</b>	<b>Credit Rs.</b>
G's Capital	—	3,30,000
G's Drawings	24,450	—
Stock as on 1st April, 2008	2,00,000	—
Bills Receivable	20,000	—
Purchases	2,70,000	—
Bills Payable	—	55,000
Motor Vehicles	5,000	—

<b>Particulars</b>	<b>Debit Rs.</b>	<b>Credit Rs.</b>
Sales	—	4,20,000
Bank Overdraft	—	5,000
Purchases Return	—	4,500
Carriage on Purchases	5,000	—
Sales Return	5,000	—
Plant and Machinery	1,00,000	—
Loose Tools	25,000	—
Trade Marks	25,000	—
Sundry Debtors	1,25,000	—
Sundry Creditors	—	1,40,000
Cash in Hand	7,550	—
Investments	70,000	—
Salaries	50,000	—
Repairs and Renewals	7,500	—
Insurance	3,000	—
Motive Power	3,500	—
Printing and Stationery	2,000	—
General Expenses	6,500	—
	<b>9,54,500</b>	<b>9,54,500</b>

**Adjustments :**

- (1) Closing Stock on 31st March, 2009 was Rs. 1,30,000.
- (2) Depreciate Plant and Machinery @ 5% p.a., Trade Marks @ 15% p.a. and Revalue Loose Tools at Rs. 20,000.
- (3) Provide 5% on Debtors for Bad Debts.
- (4) Outstanding Salaries amounted to Rs. 3,500.
- (5) Insurance of Rs. 750 was paid in advance.
- (6) Maintain a reserve for discount on Creditors @ 5%.

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-11**

**B. C. A. ( Semester - I ) Examination - 2009**

**BUSINESS COMMUNICATION**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1)** What is Body Language ? Explain various Non-verbal cues used in Communication. **[15]**

**OR**

**Q.1)** What is Communication ? Explain Principles of Communication. **[15]**

**Q.2)** Write an application letter for the post of a Lecturer in Computers for an Educational Institution in Pune along with Resume. **[15]**

**OR**

**Q.2)** On behalf of National Institute for Computer Education draft a letter announcing New Computer Course. **[15]**

**Q.3)** State and explain Guidelines for Effective Speech. **[15]**

**OR**

**Q.3)** What is Group Discussion ? Explain advantages and disadvantages of Group Discussion. **[15]**

**Q.4)** What is Report Writing ? Explain importance of Report Writing.  
Also describe structure of a Report. **[15]**

**OR**

**Q.4)** What is Interview ? Write down 12 questions you will ask to a social worker while interviewing him/her. **[15]**

**Q.5)** Write short notes : (**Any Four**) **[20]**

- (a) Good Manners and Etiquettes
  - (b) Effective Listening
  - (c) Health and Fitness
  - (d) Mental Power
  - (e) Meeting
  - (f) Improving Physical Appearance
-



Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-12**

**B. C. A. ( Semester - I ) Examination - 2009**

**PRINCIPLES OF MANAGEMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1)** Define 'Management'. Explain Management as a Profession.

**OR**

**Q.1)** Define the term 'Organisation'. What are the features of an Organisation ?

**Q.2)** What is Planning ? Explain characteristics of Planning.

**OR**

**Q.2)** Write short notes :

- (a) Importance of Staffing
- (b) Features of Motivation

**Q.3)** Discuss Theory of Motivation advocated by Maslow. Comment on the Hierarchy of Needs.

**OR**

**Q.3)** What is Controlling ? What are the advantages and limitations of Controlling ?

**Q.4)** What is Globalisation ? Explain in detail the impact of Globalisation on Indian Management Practices.

**OR**

**Q.4)** Write short notes :

- (a) Importance of Organisational Communication
- (b) Principles of Direction

**Q.5)** Write short notes : **(Any Four)**

- (a) International Management
  - (b) Scientific Management
  - (c) Functions of a Leader
  - (d) Management of Change
  - (e) Levels of Management
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3673]-13**

**B. C. A. ( Semester - I ) Examination - 2009**

**NUMERICAL METHODS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) Solve **any four** questions.
- (2) Figures to the right indicate full marks.
- (3) Use of electronic calculator is allowed.

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**Q.1) (A)** Convert decimal number 0.65 to its binary equivalent. **[05]**

(B) Convert hexadecimal number 39.B8 to octal number. **[05]**

(C) Distinguish between Roundoff Errors and Truncation Errors. **[05]**

(D) Multiply numbers 0.200000 E-4 and 0.400000 E-2. **[05]**

**Q.2) (A)** Find  $\sqrt{10}$  by Netwon Raphson Method. **[06]**

(B) Solve the following system by Process of Elimination : **[07]**

$$2x + 4y + z = 3, 3x + 2y - 2z = -2, x - y + z = 6$$

(C) Use Bisection Method to find root of equation  $x^3 - 5x + 3 = 0$  between 0 and 1 correct upto three decimal places. **[07]**

**Q.3) (A)** Solve the following equations by Gauss Jordan Elimination Method : **[06]**

$$2x + y + z = 10, 3x + 2y + 3z = 18, x + 2y + 2z = -1$$

(B) From the following data find  $y(1.45)$  using Newton's Forward Interpolation Formula : **[07]**

x	1	1.2	1.4	1.6	1.8	2
y	0	-0.112	-0.016	0.336	0.992	2

- (C) Given that  $\log_{10} 654 = 2.8156$ ,  $\log_{10} 656 = 2.8169$ ,  
 $\log_{10} 659 = 2.8189$ ,  $\log_{10} 661 = 2.8202$ , find  $\log_{10} 658$ . [07]

**Q.4** (A) Prove that  $\Delta \left[ \frac{f(x)}{g(x)} \right] = \frac{g(x) \Delta f(x) - f(x) \Delta g(x)}{g(x+h)g(x)}$  [06]

- (B) Fit a straight line to following data : [07]

<b>x</b>	0	1	2	3
<b>y</b>	2	5	8	11

- (C) Evaluate  $\int_0^1 x^2 dx$  by Simpson's  $\frac{1}{3}$  - rule. (Take  $h = 0.1$ ) [07]

- Q.5** (A) Write an algorithm for Trapezoidal Rule of Numerical Integration. [06]

- (B) Fit a second degree polynomial to following data : [07]

<b>x</b>	1	2	3	4
<b>y</b>	6	11	18	27

- (C) Find  $\int_0^{\pi/2} \sin x dx$  by Trapezoidal and Simpson  $\frac{1}{3}$  - rule, by using  
 following data : [07]

<b>x</b>	0	$\pi/12$	$2\pi/12$	$3\pi/12$	$4\pi/12$	$5\pi/12$	$\pi/2$
<b>sinx</b>	0	0.2588	0.5	0.7071	0.86603	0.9659	1

- Q.6** (A) Why do we need Numerical Methods to solve Ordinary Differential Equations ? State any three methods. [06]

- (B) Using Euler's Method solve the following Differential Equation

$\frac{dy}{dx} + 2y = 0$  given  $y(0) = 1$ , taking  $h = 0.1$  to obtain  $y(0.1)$ ,  
 $y(0.2)$ ,  $y(0.3)$ . [07]

- (C) Find approximation to second derivative of  $\cos x$  at  $x = 0.75$   
 with  $h = 0.01$ . Compare with true value. [07]

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

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**B. C. A. ( Semester - I ) Examination - 2009**

**COMPUTER FUNDAMENTALS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) Attempt any three of the following :**

**[15]**

- (a) What are the different types of Scanners ? Describe any one in detail.
- (b) Explain difference between Floppy Disk and CD-ROM.
- (c) Explain characteristics of Printer.
- (d) Perform the following :
  - (i)  $(110011)_2 = (?)_{10}$
  - (ii)  $(576)_8 = (?)_2$
  - (iii)  $(CAD)_{16} = (?)_2$
  - (iv)  $(246)_8 = (?)_{16}$
  - (v) Multiply  $(1111)_2$  by  $(1111)_2$

**Q.2)** Attempt **any three** of the following : **[15]**

- (a) What do you mean by Gate ? Explain OR and Ex-OR Gate with diagram.
- (b) Explain Accumulators and Control Unit Registers.
- (c) What is Computer Language ? Explain in detail.
- (d) Explain the concept of Segmentation.

**Q.3)** Attempt **any three** of the following : **[15]**

- (a) Give any five differences between DOS and UNIX Operating System.
- (b) Explain features of UNIX Operating System.
- (c) What is File Organisation ? Explain Sequential File Organisation.
- (d) Write a note on TCP/IP Model

**Q.4)** Attempt **any three** of the following : **[15]**

- (a) Write a note on Network Adapter.
- (b) Explain OSI Model with diagram.
- (c) Explain Memory Management.
- (d) Explain Instruction Execution Cycle with diagram.

**Q.5)** Distinguish between : (**Any Four**) **[20]**

- (a) Data and Information
- (b) Assembly Language and High Level Language
- (c) Compiler and Interpreter
- (d) LAN and WAN
- (e) Linker and Loader
- (f) RAM and ROM

**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 2**

**[3673]-15**

**B. C. A. ( Semester - I ) Examination - 2009**

**BUSINESS ORGANISATION AND SYSTEMS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

*(1) All questions are compulsory.*

*(2) Figures to the right indicate full marks.*

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**Q.1)** What is 'Business Organisation' ? Explain in brief various forms of Business Organisations. **[15]**

**OR**

**Q.1)** What is 'Foreign Trade' ? Distinguish between Home Trade and Foreign Trade. **[15]**

**Q.2)** (A) What is Globalisation ? **[05]**

(B) Bring out the Effects of Globalisation **[10]**

**OR**

**Q.2)** (A) Explain the term 'Retail Trade'. **[05]**

(B) Discuss various functions performed by the Retailer. **[10]**

**Q.3)** (A) What is a Joint Stock Company ? **[05]**

(B) Explain advantages and disadvantages of Joint Stock Company. **[10]**

**OR**

**Q.3)** (A) What is a Partnership Firm ? **[05]**

(B) Evaluate Partnership as a form of Business Organisation. **[10]**

**[3673]-15**

**1**

**P.T.O.**

**Q.4) (A)** Define Small Scale Industry. **[05]**

(B) Explain problems faced by Small Scale Industries. **[10]**

**OR**

**Q.4) (A)** What is 'Franchising' ? **[05]**

(B) Bring out the advantages and disadvantages of Franchising. **[10]**

**Q.5) Write short notes : (Any Four)** **[20]**

- (a) Business Combination
  - (b) Importance of Multinational Company
  - (c) Organisation of Finance
  - (d) Reasons for Merger
  - (e) Recent Trends in Business
  - (f) Demerits of Sole Trading Concern
-



Total No. of Questions : 8]

[Total No. of Printed Pages : 1

**[3673]-201**

**B. C. A. ( Semester - II ) Examination - 2009**

**ORGANISATIONAL BEHAVIOUR**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

- 
- |  |             |
|--|-------------|
| <b>Q.1)</b> Explain different models of Organisational Behaviour.  | <b>[16]</b> |
| <b>Q.2)</b> Define Motivation. Give difference between McGregor's Theory X and Theory Y.                 | <b>[16]</b> |
| <b>Q.3)</b> Define Personality. Explain various determinants of Personality.                             | <b>[16]</b> |
| <b>Q.4)</b> Define Stress. Explain strategies to overcome Stress at Individual and Organisational Level. | <b>[16]</b> |
| <b>Q.5)</b> Explain various Leadership Styles used in the Organisation.                                  | <b>[16]</b> |
| <b>Q.6)</b> What is the Process of Conflict ? Also explain various sources of Conflicts.                 | <b>[16]</b> |
| <b>Q.7)</b> Explain different theories of Personality.   | <b>[16]</b> |
| <b>Q.8)</b> Write short notes : <b>(Any Two)</b>   | <b>[16]</b> |
| (a) Perception Process   |             |
| (b) Nature and Importance of Motivation  |             |
| (c) Types of Groups  |             |

---

**[3673]-201/1**

Total No. of Questions : 5]

[Total No. of Printed Pages : 4

**[3673]-202**

**B. C. A. ( Semester - II ) Examination - 2009**

**ELEMENTS OF STATISTICS**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) Attempt any four of the following :**

**[4x4=16]**

- (a) Describe utility and scope of statistics with illustrations in the field of Information Technology.
- (b) The arithmetic mean of weight of 98 students as calculated from a frequency distribution is 50 kg. It was later found that the frequency of the class (30 – 40) was wrongly taken as 8 instead of 10. Calculate correct Arithmetic Mean.
- (c) The Range, Arithmetic Mean and S.D. of a group of 10 items is 20, 62 and 10 respectively. If each item is increased by 5, what will be new range, arithmetic mean and S.D. of a group of items. Also obtain C.V. of new group of items.
- (d) A family of 4 brothers and 3 sisters is to be arranged for a photograph in one row. In how many ways can they be seated if –
  - (i) all the sisters sit together ?
  - (ii) no two sisters sit together ?
- (e) Distinguish between Deterministic and Non-deterministic Experiments.

- (f) Write notes :
- (i) Chance Variation
  - (ii) Assignable Variation

**Q.2) Attempt any four of the following :**

**[4x4=16]**

- (a) Define Population and Sample with illustrations.
- (b) The following data relates to the age distribution of persons. If the modal age is 52 years, then find missing frequency :

Age (yrs.)	20-30	30-40	40-50	50-60	60-70	70-80
No. of Persons	3	7	—	16	8	3

- (c) Compute S.D. of first n natural numbers.
- (d) Define Permutations and Combinations. Hence show that

$${}^nC_r = \frac{{}^nP_r}{r!}$$

- (e) A box contains 6 red and 8 black balls. If two balls are drawn at random one by one, find probability of getting –
  - (i) both the balls are of different colour.
  - (ii) both the balls of same colour.

- (f) For 20 samples each of size 5, we have  $\sum \bar{X} = 96$ ,  $\sum R = 36$ . Compute control limits for  $\bar{X}$  and R-charts.

(for  $n = 5$ ,  $A_2 = 0.5777$ ,  $D_3 = 0$ ,  $D_4 = 2.115$ )

**Q.3) Attempt any four of the following :**

**[4x4=16]**

- (a) Suppose price of tea of first grade is 10 grams per rupee, whereas that of second grade is 12.5 grams per rupee. If equal quantity of both the types of tea are mixed together, determine price of mixture in gram per rupee.

- (b) Compute median weight (kg) of students for the following data :

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

- (c) Find  $P(A \cup B)$ , if  $P(A) = 0.2$  and  $P(B) = 0.5$ , given that :
- (i) A and B are independent events, and
  - (ii) A and B are mutually exclusive events.
- (d) State different criteria for detecting lack of control of the process from a control chart.
- (e) Explain construction and working of control charts for number of defects per item (i.e. c-chart), when standards are known.
- (f) Trainee soldiers A, B and C hit target with the probability  $\frac{1}{3}$  each. If all of them try to hit target, what is the probability that at least one of them will hit target ?

**Q.4) Attempt any four of the following :**

**[4x4=16]**

- (a) Find geometric mean of the following set of observations :  
2, 8, 20, 54, 62.
- (b) State requirements of a good measure of Central Tendency.
- (c) The Arithmetic Mean and S.D. of the values of 100 items in a group are 80 and 5 respectively. In a second group of 25 items, each item has a value equal to 60. Find combined S.D. of two groups taken together.
- (d) Define the following terms : Sample, Space and Event with illustrations.
- (e) Define the following terms : Process and Product Control.
- (f) Calculate Arithmetic Mean, Median and Mode of 10 observations given below :

46, 48, 49, 46, 48, 46, 46, 50 43, 42

**Q.5) Attempt any two of the following :**

**[2x8=16]**

- (a) The number of runs scored by cricketers A and B in 10 test matches are shown below :

<b>A</b>	5	20	90	76	102	90	6	108	20	16
<b>B</b>	40	35	60	62	58	76	42	30	30	20

**Find :**

- (i) Which cricketer is better in average ?  
(ii) Which cricketer is more consistent ?
- (b) Number of leak milk bags found in 10 samples each containing 100 bags were as follows :

<b>Sample No.</b>	1	2	3	4	5	6	7	8	9	10
<b>No. of Leak Bags</b>	2	0	3	5	4	3	1	2	0	5

Obtain control limits for np - chart. Is the sealing process of milk bags under control ? Justify by plotting Control Chart.

- (c) The number of defects found in 10 computers is as follows :

2, 5, 6, 0, 3, 4, 5, 3, 2, 1

Obtain control limits for C-chart.

Are assembled computers under control ? Justify by plotting Control Chart.

**Total No. of Questions : 4]**

**[Total No. of Printed Pages : 4**

**[3673]-203**

**B. C. A. ( Semester - II ) Examination - 2009**

**‘C’ PROGRAMMING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

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**Q.1) Solve the following : (Any Ten)**

**[10x2=20]**

- (1) What is the use of malloc( ) function ?
- (2) State different types of bitwise operators in ‘C’.
- (3) What is String ? State atleast 4 functions of String with Syntax ?
- (4) What is the use of fopen( ) function ? What is the effect of the following modes ?
  - (a) w
  - (b) r+
  - (c) w+
  - (d) a
- (5) What is strstr( ) function ?
- (6) Can we compare two pointer variables ? Comment.
- (7) What are the Command Line Arguments ?
- (8) Define C Preprocessor.
- (9) What is Nested Structure ?
- (10) What is Pointer ? What are the advantages of Pointer ?
- (11) What are the advantages of Array ?
- (12) What is ftell( ) ?

**Q.2) Answer the following : (Any Four)**

**[5x4=20]**

- (a) Explain Macro with arguments.
- (b) What is Dynamic Memory Alteration ? How to alterate memory to 2D-array dynamically ?
- (c) Explain array of pointers to string with example.
- (d) Explain features of structure with example.
- (e) Compare Macro with Function.

**Q.3) Solve the following : (Any Four)**

**[5x4=20]**

- (a) Write a 'C' program that will read a line and delete all occurrences of the word 'an' from it.
- (b) Write a 'C' program to find out maximum elements from a matrix by using Dynamic Memory Allocation.
- (c) Write a 'C' program to reverse elements of an array using function.
- (d) Create a structure to store data of 10 customers in a bank as Account\_no, Name and Balance. Write a 'C' program to print Account\_no and name of each with balance below Rs. 500.
- (e) Write a 'C' program to copy contents of one file into another, while copying, encrypt contents of file using 1's complement.

**Q.4) Trace the output : (Any Four)**

**[5x4=20]**

- (a) 

```
# include <stdio.h>

void main( )
{
    int arr [] = {10, 20, 30, 40 50};
    int * i, * j;
    i = & arr [1];
    j = & arr [4];
    printf("%d%d", j - i, *j - *i);
}
```

```
(b) # include <stdio.h>
void main( )
{
    int num[] = {24, 34, 12, 44, 56};
    int i, *j;
    j = & num [0];
    for (i = 0; i <= 4; i++)
    {
        printf("\n%d", *j);
        j++;
    }
}
```

```
(c) # include <stdio.h>
void fun (int *, int);
void main( )
{
    int a[ ] = {2, 4, 6, 8};
    int i;
    fun (a, 4);
    for (i = 0; i <= 3; i++)
        printf("%d", a[i]);
    printf("\n");
}

void Fun (int * b, int n)
{
    int i;
    for (i = 0; i < n; i++)
        * (b + i) = * (b + i) + 5;
}
```



```
(d) # include <stdio.h>
void main( )
{
    union a
    {
        int i;
        char ch [2];
    }
    union a key;
    key.i = 512;
    printf(“%d”, key.i);
    printf(“\n%d”, key.ch[  ]);
    printf(“\n%d”, key.ch[1]);
}
```

```
(e) # include <stdio.h>
void main( )
{
    int a [5] = {5, 1, 15, 20, 25};
    int i, j, k = 1, m;
    i = ++ a[1];
    j = a[1] ++;
    m = a[i++];
    printf(“%d%d%d”, i, j, m);
}
```

Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-204**

**B. C. A. ( Semester - II ) Examination - 2009**

**FILE STRUCTURE AND DATABASE CONCEPTS**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1) Attempt any four of the following :**

**[4x4=16]**

- (a) Explain Sparse Index with example.
- (b) Enlist various users of DBMS and specify their roles.
- (c) Write a short note on Data Independence.
- (d) Explain Fixed Length and Variable Length Record with example.
- (e) Discuss advantages of DBMS.

**Q.2) Attempt any four of the following :**

**[4x4=16]**

- (a) State various File Organization Techniques. Explain any one.
- (b) Write short note on B<sup>+</sup> Tree Organization.
- (c) Explain Hierarchical Model with example.
- (d) Discuss Anomalies of Unnormalized Database.
- (e) Explain Referential Integrity with suitable example.

**Q.3)** Attempt **any four** of the following :

**[4x4=16]**

- (a) Define :
  - (i) Foreign Key
  - (ii) Domain
- (b) Explain Normalization with example.
- (c) Write a short note on Data Abstraction.
- (d) Explain Basic File Operations.
- (e) What are Select and Project Operations in Relational Algebra ? Discuss with the help of example.

**Q.4)** Attempt the following :

**[16]**

Consider the following entities and their relationship :

Game(gno, gname, no\_of\_player, coachname)

Player(pno, pname)

Game and Player related with many to many relationship.

Create RDB in 3NF and solve **any five** of the following :

- (a) Insert a row in game table.
- (b) List total number of players playing 'Cricket'.
- (c) Display players having coach as 'Mr. Sharma'.
- (d) Add 'birthdate' column to player table. Use alter table command.
- (e) List all games played by 'Rahul'.
- (f) Count total number of players where coach name is 'Mr. Chappell'.

**Q.5)** Attempt the following :

- (a) Design Database for banking enterprise which records information about customers, employees of bank. A customer can be depositor or borrower. An employee of the bank can be customer of bank. There are two types of accounts, saving account and current account.

A database should provide following details to the user.

- (i) Identify all entities
- (ii) Identify all relations
- (iii) E-R Diagram

**[08]**

- (b) Consider following Relational Database :

Doctor(dno, dname, address, dcity)

Hospital(hno, hname, street, hcity)

Dochosp(dno, hno, date)

Construct queries into relational algebra :

- (i) Find hospital names to which 'Dr. Mehata' has visited.
- (ii) Find out all the doctors who have visited hospitals in the same city.
- (iii) List all the doctors who visited 'Krishna' on '1-1-02'.
- (iv) List names of hospital to which 'Dr. Aman' has visited on '5-11-02'.

**[08]**

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Total No. of Questions : 5]

[Total No. of Printed Pages : 5

**[3673]-205**

**B. C. A. ( Semester - II ) Examination - 2009**

**COST ACCOUNTING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) (A) Indicate whether the following statements are True or False :**

**(Any Five)**

**[05]**

- (a) Cost Accounting is nothing but a post-mortem of Past Costs.
- (b) Cost Centre and Cost Units are the same.
- (c) Job Cost Sheet may be used for estimating profit on the job.
- (d) Marginal costing follows behaviour-wise Classification of Cost.
- (e) A combined statement based on the Functional Budget is known as Master Budget.
- (f) Job Order Costing is most suitable for large steel mills.

**(B) Fill in the blanks : (Any Five)**

**[05]**

- (a) Costing is a technique of \_\_\_\_\_.
- (b) \_\_\_\_\_ cost tends to remain unaffected by change in output.
- (c) The payment is made by the contractee to contractor on the basis of certified bill issued by \_\_\_\_\_.
- (d) \_\_\_\_\_ is the excess of sales over contribution.
- (e) For preparing flexible budget, all costs are classified into \_\_\_\_\_.
- (f) Marginal Costing Techniques take into account the \_\_\_\_\_ classification of cost.

- Q.2)** (A) Cost Unit and Cost Centre [08]  
 (B) Limitation of Financial Accounting [07]

**OR**

- Q.2)** Define the term Element of Cost. State different Elements of Cost with suitable examples. [15]

- Q.3)** Write short notes : (**Any Three**) [15]

- (a) Contract Costing
- (b) Features of Operating Costing
- (c) Break-even Point
- (d) Advantages of Preparing Budget
- (e) Limitation of Standard Costing

- Q.4)** From the following particulars, prepare a Cost Sheet showing total and per ton cost for the month of January, 2008 : [16]

<b>Particulars</b>	<b>Rs.</b>
Indirect Wages	21,000
Factory Lighting	4,400
Motive Power	8,800
Director's Fees (Works)	2,000
Factory Cleaning	1,000
Factory Stationery	1,500
Loose Tools Written Off	1,200
Water Supply	2,400
Legal Expenses	800
Rent of Warehouse	4,000
Depreciation of Office Building	2,000
Bad Debts	200

<b>Particulars</b>	<b>Rs.</b>
Sales Dept. Salaries	3,000
Commission on Sales	3,000
Direct Wages	70,000
Factory Rent	15,000
Factory Heating	3,000
Raw Materials	66,000
Haulage	6,000
Director's Fees (Office)	4,000
Sundry Office Expenses	400
Office Stationery	1,800
Office Rent and Taxes	1,000
Factory Insurance	2,200
Direct Expenses	6,000
Depreciation of Machinery	4,000
Depreciation of Delivery Vans	400
Advertising	600
Upkeep of Delivery Vans	1,400
Bank Charges	100

The total output for the period has been 10,000 tons.

**Q.5)** (A) The following information is obtained from ABC Ltd. for the year, 2007-2008 :

	<b>Rs.</b>
Sales	— 1,00,000
Variable Cost	— 60,000
Fixed Cost	— 30,000

- (i) Find out P/V Ratio, BEP and Margin of Safety at this level.
- (ii) Calculate effect on P/V Ratio, BEP and Margin of Safety when there is 20% increase in Selling Price. [12]
- (B) From the following relating to Castrol Ltd., Pune, prepare a Flexible Budget at 60% and 80% capacity :

Particulars	70% Capacity Rs.
Variable Overheads :	
Indirect Material	5,000
Indirect Labour	15,000
Semi-variable Overheads - Electricity	50,000
Variable – 60%	
Fixed – 40%	
Repair and Maintenance	5,000
Variable – 65%	
Fixed – 35%	
Fixed Overheads :	
Salaries to Staff	10,000
Depreciation on Machines	14,000
Insurance on Machines	(+) 6,000
	<b>1,05,000</b>

The company estimated direct labour hours to be worked at 70%, capacity as 70,000 hours. Also calculate Overhead Recovery Rate at 60%, 70% and 80% capacities. [12]

**OR**



(B) From the following information, calculate :

[12]

- (i) Labour Cost Variance
- (ii) Labour Rate Variance
- (iii) Labour Efficiency Variance
- (iv) Labour Mix Variance

Workers	Standard	Actual
Skilled	40 hours @ Rs. 50 per hour	50 hours @ Rs. 50 per hour
Unskilled	60 hours @ Rs. 40 per hour	60 hours @ Rs. 45 per hour

Total No. of Questions : 8]

[Total No. of Printed Pages : 1

**[3673]-21**

**B. C. A. ( Semester - II ) Examination - 2009**

**ORGANISATIONAL BEHAVIOUR**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) Answer *any five* questions.
- (2) All questions carrying equal marks.

- 
- |   |      |
|---|------|
| Q.1) Define Organisational Behaviour. Explain various models of Organisational Behaviour. | [16] |
| Q.2) Define Motivation. Explain Process of Motivation.                                    | [16] |
| Q.3) Explain various sources of Stress.   | [16] |
| Q.4) Explain meaning and importance of Leadership of the Organisation.                    | [16] |
| Q.5) Define Personality and explain various Models of Personality.                        | [16] |
| Q.6) Explain McGregor's Theory X and Theory Y of Motivation in detail.                    | [16] |
| Q.7) Explain various strategies to overcome Conflicts.                                    | [16] |
| Q.8) Write short notes : (Any Two)  | [16] |
| (a) Emerging Trends in Organisation   |      |
| (b) Leadership Styles   |      |
| (c) Strategies of Good Health   |      |
- 

**[3673]-21/1**

Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3673]-22**

**B. C. A. ( Semester - II ) Examination - 2009**

**PRINCIPLES OF PROGRAMMING AND ALGORITHM**

**(Old 2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) *Question No. 1 is compulsory.*
- (2) *Attempt **any four** from the remaining.*
- (3) *Figures to the right indicate full marks.*

- 
- Q.1)** (A) What are the characteristics of an Algorithm ? Write an algorithm to print addition of factors of given number. [10]  
(B) Draw a flowchart to find factorial of given number. [10]
- Q.2)** (A) Write a note on Data Types in Pascal. [06]  
(B) Write a program to find addition of first and last digit of a number. [09]
- Q.3)** (A) Write a note on Compilers and Interpreters. [06]  
(B) Write a program to print Second Highest Number from an Array. [09]
- Q.4)** (A) Write a note on Global and Local Variables. [06]  
(B) Write a program to find sum of the following series : [09]  
$$(1/x) + (2/x^2) + (3/x^3) + \dots$$
- Q.5)** (A) Write a note on Record. [06]  
(B) Write a program to find sum of two matrices using function. [09]
- Q.6)** (A) Write a note on SETS. [06]  
(B) Write a program to store information of an employee such as empcode, empname, basicpay, hra, da, totalpay. Calculate totalpay of employee with hra as 15% and da as 40% of basicpay. [09]
- 

**[3673]-22/1**

Total No. of Questions : 6]

[Total No. of Printed Pages : 4

**[3673]-23**

**B. C. A. ( Semester - II ) Examination - 2009**

**ELEMENTS OF STATISTICS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) Solve *any four* questions.
- (2) Figures to the right indicate full marks.
- (3) Use of scientific calculator is allowed.

---

**Q.1) (A)** What do you mean by Measures of Central Tendency ? State any three requirements of Good Measures of Central Tendency. **[05]**

(B) Calculate Arithmetic Mean, Median and Modal marks of 10 students having the marks given below :

51, 52, 53, 51, 53, 54, 54, 50, 55, 53 **[05]**

(C) The regression equations of two correlated variables are  $X - 4$ ,  $Y = 5$  and  $X - 16$ ,  $Y = - 64$ .

Find :

(a) Arithmetic Mean of X and Y

(b) Correlation Coefficient between X and Y **[05]**

(D) Find Standard Deviation for the following frequency distribution of students according to marks in Statistics : **[05]**

Marks	20-30	30-40	40-50	50-60	60-70
No. of Students	16	31	22	7	4

**Q.2) (A)** State any five formulae of absolute or relative measures of Dispersion. **[05]**

(B) The daily expenditure of families is given below :

<b>Expenditure</b>	20-30	30-40	40-50	50-60	60-70
<b>No. of Families</b>	14	21	27	–	15

Find missing frequency if mode of the distribution is 46. **[05]**

(C) Find expected value of number of costumers (X) arriving in a certain period if the probability distribution of number of costumers is : **[05]**

<b>No. of Costumers</b>	0	1	2	3	4	5
<b>P(x)</b>	0.05	0.1	0.3	0.3	0.2	0.05

(D) For a bivariate data obtain regression line of Y on X.

$n = 5$ ,  $\sum x = 40$ ,  $\sum y = 40$ ,  $\sum x^2 = 900$ ,  $\sum y^2 = 900$ ,  $\sum xy = 750$ . **[05]**

**Q.3) (A)** Explain Procedure for Construction of Histogram. **[05]**

(B) Find median for the following frequency distribution of daily wages (in Rs.) of workers : **[05]**

<b>Daily Wages in Rs.</b>	Below 35	35-45	45-55	55-65	65-75	75-85
<b>No. of Workers</b>	12	18	22	26	36	26

(C) A box contains 8 balls of which 4 are red in colour. A random sample of 3 balls is drawn from the box without replacement. Find probability that the sample contains : **[05]**

(a) only two red balls

(b) at most two red balls

(D) If Correlation Coefficient between two variables X and Y is 0.7, find correlation between :

(a)  $2X$  and  $3Y$

(b)  $X - 10$  and  $Y + 15$

(c)  $\frac{X - 5}{2}$  and  $\frac{10 - Y}{7}$  [05]

**Q.4)** (A) Define Correlation between two variables and discuss types of Correlation with illustrations. [05]

(B) A pair of fair dice is rolled. Find probability that the sum of numbers on the uppermost faces is perfect square. [05]

(C) The prices (in Rs.) of a particular commodity in five years at two different places are given below :

<b>Price of Place A</b>	28	30	22	24	29
<b>Price of Place B</b>	23	24	25	27	29

Which place has more stable prices ? Justify. [10]

**Q.5)** (A) State Regression Coefficients. State important properties of Regression Coefficients. [05]

(B) Find value of 'a', if arithmetic mean of the following frequency distribution is 2 : [05]

<b>Variable (X)</b>	1	2	3	4
<b>Frequency</b>	$3a - 1$	$2a + 1$	$a + 1$	$2a - 5$

(C) Draw a scatter diagram for the following data and interpret the result. Also find Karl Pearson's Correlation Coefficient between X and Y : [10]

<b>X</b>	7	6	10	14	13
<b>Y</b>	22	18	20	26	24

**Q.6)** (A) State merits and demerits of Variance. [05]

(B) Explain Simple Random Sampling with suitable examples. [05]

(C) Below are the given means and ranges of samples of size 5 each taken from certain production at regular intervals :

<b>Sample No.</b>	1	2	3	4	5	6	7	8	9	10
<b>Means (<math>\bar{X}</math>)</b>	10.6	11.6	12.8	11.8	11.0	10.6	10.8	10.4	9.6	9.8
<b>Range (R)</b>	9	8	4	3	8	5	6	7	4	9

Construct a control chart of Mean and Range. Also comment on State of Control.

( $n = 5$ ,  $A_2 = 0.577$ ,  $D_3 = 0$ ,  $D_4 = 2.115$ ) [10]

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Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3673]-24**

**B. C. A. ( Semester - II ) Examination - 2009**

**OFFICE AUTOMATION**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) *Question No. 6 is compulsory.*
- (2) *Solve **any four** questions from the remaining.*
- (3) *Draw neat diagram wherever necessary.*

- 
- 
- Q.1)** (A) Explain different Spreadsheet Terminologies in detail. [08]  
(B) What is the role of Information ? Explain various characteristics of Information. [08]
- Q.2)** (A) Explain the concept of Data Processing. [08]  
(B) Explain E-mail and www in detail. [08]
- Q.3)** (A) What is Network Topology ? Explain different types of Network Topologies. [08]  
(B) Explain Elements of MS-Word in detail. [08]
- Q.4)** (A) What is File Organisation ? Describe any two types in detail. [08]  
(B) What is Internet ? Describe its application. [08]
- Q.5)** (A) Explain different functions used in Spreadsheet. [08]  
(B) Explain any four Internal and External DOS Commands. [08]



**Q.6)** Write short notes : (**Any Four**)

**[16]**

- (a) System Software
  - (b) Protocols
  - (c) DTP
  - (d) Icons
  - (e) HUB
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-25**

**B. C. A. ( Semester - II ) Examination - 2009**

**BUSINESS ENVIRONMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

*(1) All questions are compulsory.*

*(2) Figures to the right indicate full marks.*

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**Q.1)** What is Business Environment ? How is the Internal Environment of Business different from its External Environment ? **[15]**

**OR**

**Q.1)** Why is Population considered as a retarding factor for Economic Development ? **[15]**

**Q.2)** Critically examine progress of Air Transport and Road Transport in India. **[15]**

**OR**

**Q.2)** Discuss Highlights of Second Generation Reforms. **[15]**

**Q.3)** Explain in detail the objectives and functions of IMF. **[15]**

**OR**

**Q.3)** What is Credit Control ? Discuss Quantitative Tools of Credit Control. **[15]**

**Q.4)** What is Globalisation ? Explain Effect of Globalisation on India's Foreign Trade. **[15]**

**OR**

**Q.4)** Differentiate between GATT and WTO. Explain briefly the benefits to India as a member of WTO. **[15]**

**[3673]-25**

**1**

**P.T.O.**

**Q.5) Write short notes : (Any Four)**

**[20]**

- (a) Types of Taxes
  - (b) Functions of Insurance
  - (c) Domestic Trade and Foreign Trade
  - (d) Functions of Banks
  - (e) Meaning of Liberalisation
  - (f) Public Expenditure
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 4

**[3673]-301**

**B. C. A. ( Semester - III ) Examination - 2009**

**NUMERICAL METHODS**

**(Mathematics)**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

---

**Q.1) Attempt any four of the following :**

**[4x4=16]**

- (a) (i) Find  $\frac{dy}{dx}$ , if  $y = 5^x x^5$
- (ii) Evaluate  $\int (2x^3 - x^2 + 6x - 3) dx$
- (b) Find real root of the equation  $x^3 - x - 1 = 0$ , using Bisection Method.
- (c) Compute root of the equation  $x^2 - 5x + 6 = 0$ , by using Newton – Raphson Method.  
Take  $x_0 = 5$  as an initial approximation.
- (d) Using Lagrange's Interpolation Formula, find  $f(5)$ . Given that,  $f(1) = 2$ ,  $f(2) = 4$ ,  $f(3) = 8$ ,  $f(4) = 16$ ,  $f(7) = 128$ .
- (e) Show that,  $\left( \frac{\Delta^2}{E} \right) e^x \cdot \frac{Ee^x}{\Delta^2 e^x} = e^x$ .
- (f) Give geometrical interpretation of Newton - Raphson Method.

**[3673]-301**

**1**

**P.T.O.**

**Q.2)** Attempt **any four** of the following :

[4x4=16]

- (a) Find missing terms in the following table :

<b>x</b>	1	2	3	4	5	6	7	8
<b>f(x)</b>	1	8	–	64	–	216	343	512

- (b) The population of a town in decennial census is given below. Estimate population for the year 1995, by Newton's Backward Interpolation Formula :

<b>Year</b>	1961	1971	1981	1991	2001
<b>Population in thousand</b>	51	71	86	98	106

- (c) Explain : Fitting of a Linear Equation (Straight Line).  
 (d) Determine constants a, b and c, so that,  $y = a + bx + cx^2$  is the best fit to the data :

<b>x</b>	0	1	2	3
<b>y</b>	6	11	18	27

- (e) Find the values of first two derivatives at  $x = 0.4$  from the following data :

<b>x</b>	0.1	0.2	0.3	0.4
<b>f(x)</b>	1.10517	1.22140	1.34986	1.49182

- (f) Find number of men getting wages between Rs. 10 and Rs. 15 from the following table :

<b>Wages in Rs.</b>	0-10	10-20	20-30	30-40
<b>Frequency</b>	9	30	35	42

by Newton's Forward Interpolation Formula.

**Q.3)** Attempt **any four** of the following :

[4x4=16]

- (a) Evaluate  $\int_0^1 \frac{1}{1+x} dx$ , with  $h = \frac{1}{6}$  by Simpson's  $\frac{3}{8}$ th rule.

- (b) Using Euler's Method, solve  $\frac{dy}{dx} + 2y = 0$ .

Given  $y(0) = 1$ . Take  $h = 0.1$ . Find  $y(0.1)$ ,  $y(0.2)$  and  $y(0.3)$ .

- (c) Derive, Simpson's  $\left(\frac{1}{3}\right)$ th rule for numerical integration.
- (d) Derive, Euler's Method to find successive approximation for differential equation,  $\frac{dy}{dx} = f(x, y)$  with  $y(x_0) = y_0$ .
- (e) Find approximate value of  $\int_0^{\frac{\pi}{2}} \sqrt{\cos x} \, dx$  by Simpson's  $\left(\frac{1}{3}\right)$ th rule.
- (f) Derive, Trapezoidal Rule for numerical integration.

**Q.4)** Attempt **any two** of the following :

**[8x2=16]**

- (a) Using Picard's Method, solve  $\frac{dy}{dx} = x - y$ , when  $x = 0.2$ . Given that,  $y(0) = 1$ .
- (b) Use Runge - Kutta Fourth Order Method to find the value  $y(1)$ , if  $\frac{dy}{dx} = \frac{y - x}{y + x}$ .  
Given that,  $y(0) = 1$ .  
Take  $h = 1$

- (c) (i) Evaluate  $\int_0^{\frac{\pi}{2}} \sin x \, dx$ , by Trapezoidal rule and Simpson's  $\left(\frac{3}{8}\right)$ th rule from the values provided in the following table :

x	0	$\frac{\pi}{12}$	$\frac{2\pi}{12}$	$\frac{3\pi}{12}$	$\frac{4\pi}{12}$	$\frac{5\pi}{12}$	$\frac{\pi}{2}$
<b>sinx</b>	0	0.2588	0.5	0.7071	0.86603	0.9659	1

- (ii) A dealer wishes to purchase a number of fans and sewing machines. He had only Rs. 5,760 to invest and has a space for atmost 20 items. A fan costs Rs. 360 and sewing machine Rs. 240. His expectation is that he can sell a fan at a profit of Rs. 22 and sewing machine at a profit of Rs. 18. Assuming that he can sell all the items that he can buy, formulate this problem as a L.P.P. to maximize his profit.

**Q.5) Attempt any two of the following :**

**[8x2=16]**

- (a) Solve the following L.P.P. by graphical method :

$$\begin{aligned} \text{Minimize } Z &= x_1 + 2x_2 \\ \text{Subject to } x_1 + 2x_2 &\leq 20 \\ x_1 + x_2 &\leq 12 \\ x_1, x_2 &\geq 0 \end{aligned}$$

- (b) Obtain an initial basic feasible solution to the following transportation problem by using VAM :

	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>Availability</b>
<b>A</b>	11	13	17	24	250
<b>B</b>	16	18	14	10	300
<b>C</b>	21	24	13	10	400
<b>Demand</b>	200	225	275	250	

- (c) Solve the following assignment problem :

	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
<b>A</b>	15	13	14	17
<b>B</b>	11	12	15	13
<b>C</b>	13	12	10	11
<b>D</b>	15	7	14	16

Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-302**

**B. C. A. ( Semester - III ) Examination - 2009**

**DATA STRUCTURE USING 'C'**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) *All questions are compulsory.*
- (2) *All questions carry equal marks.*
- (3) *Assume suitable data, if necessary.*

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**Q.1) Attempt any eight of the following :**

**[8x2=16]**

- (a) Define ADT (Abstract Data Type).
- (b) Define Space Complexity.
- (c) What are the different ways to represent polynomial ?
- (d) What is Self-reference Structure ?
- (e) What is Circular Queue ?
- (f) Explain different operations performed on a Stack.
- (g) What do you mean by Traversing a Linked List ?
- (h) Define Almost Complete Binary Tree.
- (i) List different methods for graph representation in Memory.
- (j) List Exchange Sort Algorithm.

**Q.2) Attempt any four of the following :**

**[4x4=16]**

- (a) Explain algorithm to evaluate postfix expression.
- (b) Convert following infix expressions into postfix.
  - (i)  $A + B * C$
  - (ii)  $A + B + C$



- (c) Explain Static and Dynamic Representation of Stack.
- (d) Write a program to accept size of stack and add elements onto the stack one by one which are accepted from user until stack is full.
- (e) What is Queue ? What are the various Applications of Queue ? How Queue is differ from Stack ?

**Q.3)** Attempt **any four** of the following : **[4x4=16]**

- (a) Write a C function to search element in a Binary Search Tree.
- (b) Write a program to search an element in an array using Iterative Binary Search Algorithm.
- (c) Explain with suitable example how data is inserted into a linked list at beginning and at end.
- (d) What is Array ? What is Linked List ? What are the advantages of an array over Linked List ?
- (e) Explain Doubly Linked List in detail. How it differs from Singly Linked List.

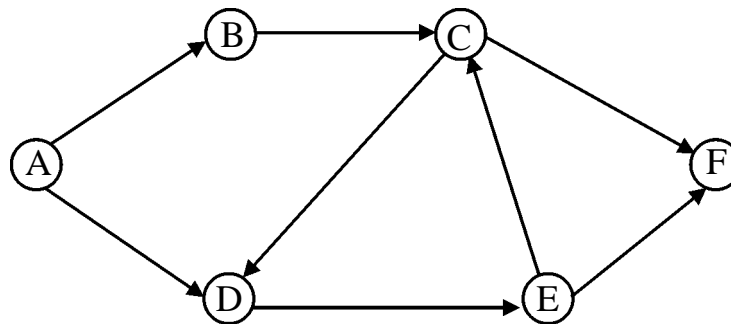
**Q.4)** Attempt **any four** of the following : **[4x4=16]**

- (a) Explain difference between Binary Tree and Heap.
- (b) Construct Binary Search Tree for the following data and give inorder, preorder and postorder tree traversal.  
20, 30, 10, 5, 16, 21, 29, 45, 0 15, 6
- (c) Define Height Balanced Tree. Built an AVL Tree for the following data :  
Sun, Mon, Tue, Wed, Thur.
- (d) Define the terms :
  - (i) Degree of Graph
  - (ii) Cycle in a Graph
  - (iii) Weighted Graph
  - (iv) Spanning Tree
- (e) Write a program that finds height of Binary Tree.

**Q.5)** Attempt **any four** of the following :

**[4x4=16]**

- (a) Explain Quick Sort with example.
- (b) Write a program in C to accept 5 numbers from the user and sort using Merge Sort.
- (c) Define Hash Function. What are the characteristics of Good Hash Function ?
- (d) Sort the following elements using Bubble Sort. Show each step in detail :  
7, 3, 5, 8, 2, 1
- (e) Traverse the following graph using DFS (Start A) :



**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 3**

**[3673]-303**

**B. C. A. ( Semester - III ) Examination - 2009**

**SOFTWARE ENGINEERING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

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**Q.1) Attempt the following : (Any Eight)**

**[16]**

- (a) Define Open and Closed System.
- (b) What are the different types of Interviewing ?
- (c) What is Ripple Effect ?
- (d) State advantages of Waterfall Model.
- (e) What is Economical Feasibility ?
- (f) List advantages and disadvantages of White Box Testing.
- (g) State different types of Decision Tables and explain any one.
- (h) Define Software Engineering.
- (i) What is Stamp Coupling ?
- (j) Define Beta Testing.

**Q.2) Answer the following : (Any Four)**

**[16]**

- (a) What is Data Dictionary ? Explain its various elements.
- (b) Explain different McCall's Quality Factors.
- (c) What is Fact Finding Technique ? Explain any one technique in detail.
- (d) What is Prototyping ? Explain steps in Prototyping.
- (e) What is Module ? What are the different attributes of Module ?
- (f) What is Black Box Testing ? Explain methods used in BBT.

**Q.3) (A)** Design an Output Screen for Bill of purchased items from a shop, maximum for 5 items. **[08]**

**(B)** ABC Company decides to give Diwali Bonus to all employees for which the management has divided employees into three categories namely Administrative Staff (AS), Office Staff (OS), Workers (W) and considered the following rules :

- (i) If the employee is permanent and in the AS Category the bonus amount is three months salary.
- (ii) If the employee is permanent and in the OS Category the bonus amount is two salaries.
- (iii) If the employee is permanent and in the W Category the bonus amount is one month salary.
- (iv) If the employee is temporary, then half of the amount given to permanent employee as bonus is given to them.

Represent above study using :

- (i) Decision Tree
- (ii) Decision Table **[08]**

**Q.4) Short notes : (Any Four)** **[16]**

- (a) Elements of System
- (b) Structure Chart
- (c) Entity Relationship Model
- (d) Role of System Analyst
- (e) Spiral Model
- (f) SRS Documentation

**Q.5) Case Study :**

**[16]**

Ranbaxy Pharmaceutical Ltd., distributes a range of products in 5 regions spread over 5 States in India. The regions are further subdivided into 4-5 zones each. Each zone has 30 to 40 sales-representatives. The company's product range includes 20 different items. For each item, sales-representativewise targets for quantity to be sold each month are established. The targets are set at the beginning of the quarter. The actual sales made by each of the sales-representatives are built up from invoices, which alongwith other information carry unique sales-representatives number.

The company desires to have an information system to monitor sales performance of the representative with respect to targets and product-wise sales, similar performance reports for the zones, for the regions and for the company as a whole are also required. Variation in targeted and actual sales beyond 10% on either side is to be highlighted. Analyse problem from the specifications given above.

- (a) Identify all entities
- (b) Draw Context Level Diagram and
- (c) First Level DFD for the system.

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Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-304**

**B. C. A. ( Semester - III ) Examination - 2009**

**MANAGEMENT ACCOUNTING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

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**Q.1)** What is meant by 'Management Accounting'. Discuss its nature, scope and advantages. **[16]**

**OR**

**Q.1)** What do you mean by 'Analysis of Financial Statement' ? Explain necessity and methods of 'Financial Statement Analysis'. **[16]**

**Q.2)** You are required to prepare a statement showing working capital requirements from the following :

Output : 10,000 units per annum

**Elements of Cost      Rs. (per unit)**

Raw Materials	6
Direct Labour	4
Overheads	5
	<hr/>
Total Cost	15
Profit	3
	<hr/>
Selling Price	18
	<hr/>

- (a) Raw Materials are kept in stock on an average of one month.
- (b) Finished Goods are kept in stock on an average of  $1\frac{1}{2}$  months.
- (c) Work in Process on an average 2 weeks. (60% complete as to Labour and Overheads)
- (d) Credit allowed to debtors is 2 months.
- (e) Credit allowed by creditors is 1 month.
- (f) Lag in Payment of Wages is 1 week. **[16]**

**Q.3)** The Sales and Profit during two years were :

<b>Year</b>	<b>Sales (Rs.)</b>	<b>Profit (Rs.)</b>
2008	1,50,000	20,000
2009	1,70,000	25,000

You are required to calculate :

- (a) Break-even Point
- (b) Profit Volume Ratio
- (c) Sales required to earn profit of Rs. 40,000.
- (d) The profit made when sales are Rs. 2,50,000.
- (e) Variable Costs of the two periods.
- (f) Margin of Safety in 2009. **[16]**

**OR**

**Q.3)** What is 'Fund Flow Statement' ? Explain proforma of 'Sources and Application of Funds'. **[16]**

**Q.4)** From the following Trading and Profit and Loss A/c. for the year ended on 31st March, 2009 and the Balance Sheet as on that date : **[16]**

**Calculate :**

- (a) Current Ratio
- (b) Liquid Ratio
- (c) Gross Profit Ratio
- (d) Stock Turnover Ratio

**Trading and Profit and Loss A/c. for the year ended  
on 31st March, 2009**

To Opening Stock	48,000	By Sales	3,60,000
To Purchases	3,19,000	By Closing Stock	52,000
To Gross Profit	45,000		—
	<b>4,12,000</b>		<b>4,12,000</b>
To Expenses	16,200	By Gross Profit	45,000
To Net Profit	28,800		—
	<b>45,000</b>		<b>45,000</b>

**Balance Sheet as at 31st March, 2009**

<b>Liabilities</b>	<b>Rs.</b>	<b>Assets</b>	<b>Rs.</b>
Share Capital	1,00,000	Fixed Assets	1,27,800
Reserves	80,000	Stock	52,000
Profit and Loss A/c.	60,000	Debtors	40,000
Creditors	43,800	Bank Balance	84,000
Bank Overdraft	20,000		
	<b>3,03,800</b>		<b>3,03,800</b>

**OR**

**Q.4)** Define the term 'Budget' and 'Budgetary Control'. Explain its advantages and limitations. **[16]**

**Q.5)** Write short notes : (Any Two) **[16]**

- (a) Distinction between Financial Accounting and Management Accounting
- (b) Cash Flow Statement
- (c) Limitations of Marginal Costing
- (d) Objectives of Budgetary Control System.



Total No. of Questions : 5]

[Total No. of Printed Pages : 5

**[3673]-305**

**B. C. A. ( Semester - III ) Examination - 2009**

**RELATIONAL DATABASE MANAGEMENT SYSTEM**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1) Attempt all :**

**[16]**

- (a) What is RDBMS ? State popular commercial RDBMS Applications.
- (b) What is Cursor ? Which are various types of Cursors ?
- (c) Give proper syntax of Trigger.
- (d) What is Schedule ? Give types of Schedules.
- (e) List properties of Transaction.
- (f) Define Lock. List different types of Locks.
- (g) Define Deadlock.
- (h) Define Commit and Roll Back.

**Q.2) Attempt any four :**

**[16]**

- (a) Write a note on any two products of RDBMS.
- (b) Explain advantages and disadvantages of PL/SQL.
- (c) What is Transaction ? Explain States of Transaction.
- (d) Explain two phase locking protocols with example.
- (e) Draw and explain Architecture of Remote Back-up System.

**[3673]-305**

**1**

**P.T.O.**

**Q.3) Attempt any four :**

**[16]**

- (a) Explain different control structures used in PL/SQL with proper example.
- (b) What is Serializability ? Explain Conflict Serializability.
- (c) Explain Deadlock Prevention Methods.
- (d) Explain different types of Failures.
- (e) Define following terms :
  - (i) Upgrading and Downgrading
  - (ii) Growing Phase
  - (iii) Shrinking Phase
  - (iv) Lock Point

**Q.4) Attempt any four :**

**[16]**

- (a) Consider the following relational database :  
doctor (doct\_no, doct\_name, address, city, area)  
hospital (hosp\_no, hosp\_name, hosp\_city)  
doc\_hosp (doct\_no, hosp\_no)  
Write a script of cursor to print list showing the doctorwise list of hospitals.
- (b) Consider the following relational database :  
movie (m\_no, m\_name, rel\_year)  
actor (a\_no, a\_name)  
mov-act (m\_no, a\_no, rate)  
Define a trigger before insert or update of each row of movie that movies released after 2009 be entered into movie table.
- (c) Consider the following relational database :  
publisher (p\_no, p\_name, p\_addr)  
book (b\_no, b\_name, price)  
pub-book (p\_no, b\_no)  
Write a script, which will take publisher name as parameter and will display books published by the publisher.

- (d) Consider the following relational database :

dept (d\_no, d\_name, loc)

employee (e\_no, e\_name, e\_addr, e\_salary, d\_no)

Write a function that will accept d\_name as a parameter and return no. of employees, working in that department.

- (e) Write a package, which consists of one procedure and one function. Pass a number to procedure and print whether a number is odd or even. Pass employee number to function and print salary of that employee. For this consider the following relation :

employee (e\_no, e\_name, e\_addr, salary)

**Q.5) Attempt any four :**

**[16]**

- (a) Consider the following transaction. Find out two schedules serializable to serial schedule  $\langle T1, T2, T3 \rangle$  :

T1	T2	T3
Read (X)	Read (Z)	Read (Y)
$X = X + 100$	Read (Y)	Read (Z)
Write (X)	$Y = Y + Z$	$Y = Y + 50$
Read (Y)	Write (Y)	Write (Y)
$Y = Y - 100$	Read (X)	$Z = Z + Y$
Write (Y)	$X = N - Z$	Write (Y)
	Write (X)	

- (b) Consider the following non-serial schedule. Is this schedule serializable to a serial schedule  $\langle T1, T2 \rangle$  ?

<b>T1</b>	<b>T2</b>
Read (X) $X = X - N$	
	Read (X) $X = X + N$
Write (X) Read (Y)	
	Write (X)
$Y = Y + N$ Write (Y)	

- (c) The following is a list of events in an interleaved execution if set of transaction T0, T1, T2 with two phase locking protocol :

<b>Time</b>	<b>Transaction</b>	<b>Code</b>
t1	T0	Lock (A, X)
t2	T1	Lock (B, S)
t3	T2	Lock (A, S)
t4	T0	Lock (C, X)
t5	T1	Lock (D, X)
t6	T0	Lock (D, S)
t7	T1	Lock (C, S)
t8	T2	Lock (B, S)

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

- (d) Following is the list of events in an interleaved execution if set T1, T2, T3 and T4 have 2PL (two phase lock). Is there a deadlock ? If yes, which transactions are involved in deadlock :

Time	Transaction	Code
t1	T1	Lock (A, X)
t2	T2	Lock (B, S)
t3	T3	Lock (A, S)
t4	T4	Lock (B, S)
t5	T1	Lock (B, X)
t6	T2	Lock (C, X)
t7	T3	Lock (D, S)
t8	T4	Lock (D, X)

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

[Start - transaction, T1]

[Write - item, T1, D, 20]

[Commit, T1]

[Checkpoint]

[Start - transaction T4]

[Write - item, T4, B, 15]

[Commit, T4]

[Start - transaction, T2]

[Write - item, T2, B, 25]

[Start - transaction, T3]

[Write - item, T3, A, 30]

[Write - item, T2, D, 25] ← System Crash

If deferred update technique is used, what will be the recovery procedure ?

Total No. of Questions : 6]

[Total No. of Printed Pages : 3

**[3673]-31**

**B. C. A. ( Semester - III ) Examination - 2009**

**DIGITAL COMPUTER DESIGN AND COMPUTER ORGANISATION**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

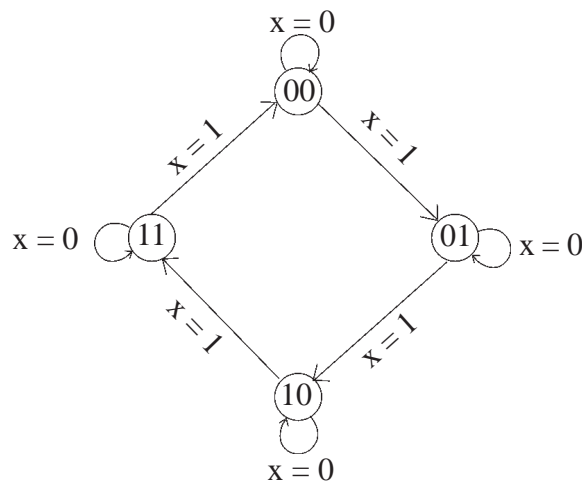
- (1) Solve *any five* questions.
- (2) Figures to the right indicate full marks.
- (3) Draw neat labelled diagrams wherever necessary.
- (4) Assume suitable data wherever necessary.

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**Q.1) (A)** Write excitation table, map and logic diagram by using J-K Flip-Flop :

**[08]**



**(B)** Simplify and draw simplified logic diagram using K-map :

**[08]**

$$f(A, B, C, D) = \sum(0, 1, 4, 5, 8, 9, 10, 11, 12, 13)$$

- Q.2)** (A) State and prove De-Morgan's Theorems. [04]
- (B) (a) Using 2 I/P NOR Gate construct
- (i) 2 I/P AND Gate
- (ii) 2 I/P OR Gate
- (b) Using 2 I/P NAND Gate construct
- (i) NOT Gate
- (ii) 2 I/P OR Gate [04]
- (C) Draw graphic symbol and excitation table for : [04]
- (a) 2 I/P X-OR Gate
- (b) 2 I/P AND Gate
- (D) Explain working of serial in serial out SISO Shift Register. [04]
- Q.3)** (A) Explain RAM and ROM with the help of block diagram. [04]
- (B) A Digital Computer has AR, BR and CR initially have the following values : [04]
- AR : 11011101
- BR : 10100110
- CR : 00011001
- Determine 8-bit values in each register after the executions of the following sequence of micro-operations.
- $AR \leftarrow AR + 1$ ,  $AR \leftarrow AR - BR$ ; increment AR,  
Subtract BR to AR
- $CR \leftarrow CR \vee BR$  ; OR BR to CR
- $BR \leftarrow BR \wedge CR$  ; AND CR with BR
- (C) Explain in detail logical Micro-operation Circuit. [04]
- (D) Explain in detail Basic Computer Instruction Format. [04]

**Q.4)** (A) Explain Register Transfer Language in detail. [08]

(B) With the help of flowchart, explain Instruction Cycle in brief. [08]

**Q.5)** Explain details of Accumulator Logic. [16]

**Q.6)** Attempt **any four** : [16]

- (a) Draw and write excitation table for 2 line to 4 line Decoder with 'Active Low' enable (Strobe) I/P.
  - (b) Explain Half Adder and Half Subtractor Circuit.
  - (c) Draw flowchart for Interrupt Cycle.
  - (d) List any four Registers for the Basic Computer with its Bit Size.
  - (e) Explain Input-Output Configuration with block diagram.
-



Total No. of Questions : 4]

[Total No. of Printed Pages : 4

**[3673]-32**

**B. C. A. ( Semester - III ) Examination - 2009**

**‘C’ PROGRAMMING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instruction :**

*Use ANSI C Method.*

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---

**Q.1)** Draw a flowchart to calculate Factorial of Number. **[10]**

**Q.2)** Attempt **any four** of the following : **[20]**

- (a) Explain Switch Case with Break and Without Break Statement.
- (b) Write a short note on Built-in-operators. (any 4)
- (c) Explain Data Types in ‘C’.
- (d) Compare WHILE and DO - WHILE.
- (e) Explain use of Unary Operators with Pointers.

**Q.3)** Explain output of the following codes : **(Any Four)**  
(Assume all suitable header files are included.) **[20]**

(a) `void main( )`  
`{`  
`long int x;`  
`double y;`  
`unsigned z;`  
`printf(“%d”, size of (x) + size of (y) + size of (z));`  
`}`

(b) # define ADD (B) (B + 10)

```
main( )
```

```
{
```

```
    int a = 10, b;
```

```
    b = ADD (a - 20);
```

```
    printf("%d", b);
```

```
}
```

(c) main( )

```
{
```

```
    int x = 2;
```

```
    for (x <= 10; x += 2)
```

```
    {
```

```
        switch (x)
```

```
        {
```

```
            case 1 : printf("One");
```

```
            case 2 : printf("Two");
```

```
            case 3 : printf("Three");
```

```
                break;
```

```
            case 6 : printf("Six");
```

```
            case 7 : printf("Seven");
```

```
                break;
```

```
        }
```

```
        printf("\n");
```

```
    }
```

```
}
```

```
(d)  main( )
    {
        int x = 3, y, z;
        y = ++x;
        z = ++y - x++;
        printf(“%d\t%d\t%d”, ++x, x++, y++);
    }
```

```
(e)  main( )
    {
        int a = 7, y = 8, c = 9;
        printf(“Ans = %d”, (c >= y && y >= a) ? 0 : 1);
    }
```

**Q.4) Attempt the following : (Any Five)**

**[30]**

(a) Write a program to find the sum of digits of a given number.

(b) Write a program to generate following output :

```
1
0  1
1  0  1
0  1  0  1
1  0  1  0  1
```

(c) Write a program to accept 'n' nos array from user and find highest element.

(d) Write a program to compute 'n' terms of the following series :

$$1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} \dots \dots \frac{1}{n!}$$

- (e) Write a program to check whether number is even or odd using command line argument.
  - (f) Write a menu driven program for the following :
    - (i) Perfect Number
    - (ii) Magic Number (Armstrong Number)
    - (iii) Prime Number
-

**Total No. of Questions : 7]**

**[Total No. of Printed Pages : 2**

**[3673]-33**

**B. C. A. ( Semester - III ) Examination - 2009**

**SYSTEM ANALYSIS AND DESIGN**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

---

**Q.1)** Explain Spiral Model in detail. **[10]**

**Q.2)** Define Feasibility Study. Describe types of Feasibilities in detail. **[10]**

**Q.3)** Design a suitable data entry screen for 'Opening New Account' for a 'Vidhyavardhini Bank'. **[10]**

**OR**

**Q.3)** Draw a layout of creating 'New E-mail ID Form' to be filled by the customer who wants to open a new 'E-mail Account'. Also suggest required validation. **[10]**

**Q.4)** A college decides to give increment to all its employees. The employees are divided into categories namely Administrative Staff (AS), Non-Teaching Staff(NTS) and Teaching Staff(TS) and considered the following rules :

- (a) If the employee is permanent and in the Teaching Staff Category, then the increment is 20% of basic salary.
- (b) If the employee is permanent and in the Administrative Staff Category, then the increment is 15% of basic salary.
- (c) If the employee is permanent and in the Non-Teaching Staff Category, then the increment is 5% of basic salary.
- (d) If the employee is temporary, then half of the amount is given to him as per the permanent employee's increment in basic salary.

Design Decision Tree and Decision Table for the above case. **[10]**

**[3673]-33**

**1**

**P.T.O.**

**Q.5)** 'Surya Electronic' is one of the reputed 'Electronic-shoppe' in the city. Electronic-shoppe has a very good collection of different types of electronic products. Organisation wants to know the efficiency of its services to customers. Prepare questionnaire to be distributed among the customers for getting maximum information about the electronic-shoppe services offered to the customers. **[10]**

**Q.6)** Define the term 'System'. Describe various elements of the System. **[10]**

**Q.7)** Write short notes : (**Any Four**) **[20]**

- (a) Rules of Designing Input Screen
  - (b) Structured English
  - (c) Role of System Analyst
  - (d) Open and Closed System
  - (e) Waterfall Model
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 6

**[3673]-34**

**B. C. A. ( Semester - III ) Examination - 2009**

**MANAGEMENT ACCOUNTING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

---

---

**Q.1) (A) Answer the following in brief : (Any Five) [10]**

- (a) Define 'Financial Accounting'. State its objectives.
- (b) What is 'Capital' and 'Drawing' ?
- (c) Describe 'Cost Concept' of Accounting.
- (d) Why 'Bank Reconciliation Statement' is required to be prepared ?
- (e) What is 'Suspense Account' ? Give its importance.
- (f) What is 'Personal Account' ? State its rule with suitable example.
- (g) What is 'Debit Note' ? When is it prepared ?

**(B) Define and distinguish between 'Debtor' and 'Creditor'. [05]**

**Q.2) (A) What is 'Cost Accounting' ? State its limitations. [07]**

**(B) Write notes on **any two** of the following : [08]**

- (a) Functions of Store-keeper
- (b) Bill of Material
- (c) Goods Received Note

**[3673]-34**

**1**

**P.T.O.**

**Q.3)** The following is the ‘Trial Balance’ of Mr. ABC, prepared as on 31st March, 2009 :

**Trial Balance**

<b>Particulars</b>	<b>Amount Rs.</b>	<b>Amount Rs.</b>
Wages	6,000	—
Drawings	2,000	—
Purchases and Sales	18,000	26,000
Returns of Goods	300	460
Furniture	4,000	—
Buildings	12,000	—
Office Expenses	800	—
Advertisements	500	—
Stock (1st April, 2008)	5,000	—
Rent and Taxes	400	—
Commission	200	—
Bills Receivables	800	—
Travelling Expenses	250	—
Bad Debts	190	—
Sundry Debtors and Creditors	11,000	2,800
Cash and Bank	2,150	1,300
Investments	2,000	—
Power and Fuel	1,060	—
Capital	—	34,000
Discount Received	—	340
R.D.D.	—	1,500
Income from Investments	—	250
	<b>66,650</b>	<b>66,650</b>



You are required to prepare 'Trading' and 'Profit and Loss Account' for the year ended on 31st March, 2009 and Balance Sheet as on that date after giving effects to the following adjustments :

- (1) Provide Depreciation on Building and Furniture @ 10%.
- (2) Rent is Outstanding to the extent of Rs. 120.
- (3) R.D.D. must be @ 5% on Debtors.
- (4) Outstanding Interest on Investments Rs. 50.
- (5) Goods worth Rs. 150 are distributed as free samples.
- (6) Closing Stock was valued at Rs. 8,200. [20]

**Q.4)** The following are the details of receipts and issues of material during the month of March, 2009 :

<b>Date</b>	<b>Receipts (Units)</b>	<b>Rate (Rs.)</b>
<b>March, 2009</b>		
1	1,000	125
5	1,200	120
15	1,500	130
24	800	150
29	1,200	135
	<b><u>ISSUES</u></b>	
3	1,200	
10	800	
18	1,500	
22	500	
26	600	
30	1,000	

The Opening Stock of Raw Material was 500 units @ Rs. 122.

You are required to prepare Stores Ledger as per :

- (a) F.I.F.O. Method and
- (b) Weighted Average Method of Pricing of Material Issues. [15]

**OR**

**Q.4)** Mr. Cost has provided you details of the following expenditures incurred during the period from 1st October, 2008 to 31st March, 2009 :

<b>Expenses</b>	<b>Amount (Rs.)</b>
Power	1,05,000
Factory Rent and Rates	30,000
Insurance (Machinery)	4,000
Supervision Charges	26,000
Indirect Material	18,000
Indirect Labour	15,000
Repairs and Maintenance	12,000
Material Handling Charges	15,000
Cost of Storage	8,000

**Additional Information :**

<b>Particulars</b>	<b>Production Cost Centres</b>				
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Cost of Direct Material (Rs. in lacs)	2.00	2.50	3.00	1.50	1.00
Labour Cost (Rs. in lacs)	1.00	1.50	1.50	0.60	0.40
Horse Powers	120	80	70	30	50
Area Occupied (Sq. Meters)	200	400	500	200	700
Value of Machineries (Rs. in lacs)	10.00	15.00	12.00	8.00	5.00
Depreciation on Machinery	5%	4%	5%	3%	4%
Machine Hours (per month)	800	600	400	400	200

You are required to prepare a statement showing distribution of overheads among the different production cost centres.

**[15]**

**Q.5)** The following details of cost are extracted from the cost records of BECEEA Limited :

<b>Particulars</b>	<b>Amount (Rs.)</b>
Purchases of Raw Material	1,40,000
Factory Rent	30,000
Printing and Stationery	12,000
Advertisement	8,000
Power and Fuel	24,000
Salary	86,000
Indirect Material	8,600
Canteen Expenses	16,800
Salesmen Commission	24,000
General Expenses	15,000
Direct Labour Cost	1,50,000
Packing Charges (for distribution of finished goods)	15,000
Repairing of Machines	5,100
Drawing Office Salary	15,000

<b>Inventory</b>	<b>Opening</b>	<b>Closing</b>
Raw Material	14,500	15,400
Work-in-progress	8,700	7,500
Finished Goods	21,000	16,000

**Additional Information :**

- (1) Salary includes Rs. 26,000 as Works Manager's Salary and General Expenses include Rs. 2,800 as hire charges of the machinery which was hired for a production cost centre.
- (2) Machinery and Office Equipments having book value Rs. 1,50,000 and 40,000 are to be depreciated by 10% and 5% respectively.

- (3) Canteen Expenses are to be apportioned in the ratio of 4 : 1 in Factory and Office.

You are required to prepare cost sheet showing :

- (a) Prime Cost
- (b) Works Cost
- (c) Cost of Production
- (d) Cost of Goods Sold
- (e) Total Cost, and
- (f) Sales to earn profit of 25% on sales [15]

**OR**

**Q.5) Write short notes : (Any Three) [15]**

- (a) Objectives of Cost Accounting
  - (b) Cost Unit
  - (c) Causes of Labour Turnover
  - (d) Over Absorption of Overheads
  - (e) Advantages of Different Stock Levels
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-35**

**B. C. A. ( Semester - III ) Examination - 2009**

**DATABASE MANAGEMENT SYSTEM**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) Case Study :**

‘Star’ is an agency for flat booking and it has number of builders and agents who are jointly working. A customer can get a flat for residential or commercial purpose. If customer is approached through an agent, the agency and builders give some commission to the agent. Agent shows various flats and sites within various locations.

Study the above case and do the following :

- (a) Draw Entity Relationship Diagram.
- (b) Design Relational Database. **[15]**

**OR**

**Q.1) What is Normalization ? Explain types of Normal Forms with example.** **[15]**

**Q.2) Consider the following entities and relationship and solve the queries in SQL : (Any One)** **[15]**

Customer (cno, cname, city)

Quotation (quot\_no, description, amt\_quoted)

Customer and Quotation are related with one to many relationship.

- (1) Add a row in the table.
- (2) List all customers who live in 'Delhi' or 'Calcutta'.
- (3) Display minimum amount quoted for 'LCD'.
- (4) Delete all the quotations of 'Printer'.
- (5) Remove tables from the Database.

**OR**

**Q.2) Wholesaler (wno, wname, address, city)**

Product (pno, pname)

Wholesaler and Product are related with many to many relationship.

- (1) List wholesalers of product 'Keyboard'.
- (2) Count number of wholesalers from city 'Mumbai'.
- (3) Delete records of wholesaler where product is 'Mouse'.
- (4) Insert a tuple (record) in wholesaler relation.
- (5) List wholesalerwise product details. **[15]**

**Q.3) Explain the following commands/functions of SQL with example :**

**(Any Five)** **[15]**

- (1) Order by
- (2) Group by
- (3) Alter
- (4) Select
- (5) Avg
- (6) Drop Table

**Q.4) Attempt any three of the following :** **[15]**

- (a) Explain advantages and disadvantages of DBMS.
- (b) Differentiate between Conventional File System Vs DBMS.
- (c) Explain 'having clause' of SQL with example.
- (d) Explain different users of DBMS.

**Q.5) Write short notes : (Any Four)**

**[20]**

- (a) DDL Commands
  - (b) Network Data Model
  - (c) Mapping Constraints
  - (d) Nested Queries
  - (e) Data Independence
-

**Total No. of Questions : 4]**

**[Total No. of Printed Pages : 3**

**[3673]-401**

**B. C. A. ( Semester - IV ) Examination - 2009**

**OPERATING SYSTEMS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

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

**Q.1) Attempt **any ten** of the following :**

**[10x2=20]**

- (1) What is Process Register ?
- (2) What is Interrupt Processing ?
- (3) What are the services provided by Operating Systems ?
- (4) Define Logical Address.
- (5) What is Deadlock ?
- (6) What is Fragmentation ?
- (7) What is Multiprogramming ?
- (8) What are the three categories of I/O Devices ?
- (9) What is Swapping ?
- (10) What is Pageframe ?
- (11) Explain System Call.
- (12) What are the types of Hardware Interrupts ?



**Q.2)** Attempt **any five** of the following :

**[5x5=25]**

- (a) Calculate Average Turnaround Time and Average Waiting Time for FCFS and Non-pre-emptive SOF. Assume all processes have arrived at time  $t = 0$ .

Process	CPU Burst Time
$P_1$	9
$P_2$	13
$P_3$	5
$P_4$	19
$P_5$	2

- (b) Explain Traditional UNIX Kernel in detail.
- (c) Explain Segmentation.
- (d) Explain Long Term Scheduler.
- (e) Explain Process State Diagram.
- (f) Compare MFT and MVT.

**Q.3)** Attempt **any one** of the following :

**[1x10=10]**

- (a) (i) What are the strategies for exploiting Spatial Locality and Temporal Locality ?
- (ii) Explain Resident Monitor in detail.
- (b) (i) Explain Deadlock Prevention Strategies.
- (ii) Write different steps performed by O.S. during Context Switch.

**Q.4)** Attempt **any five** of the following :

**[5x5=25]**

- (a) Write difference between Programmed Input/Output and Interrupt Driven Input/Output.
  - (b) Write a note on Memory Hierarchy.
  - (c) Explain Process Control Block (PCB) in detail.
  - (d) What are performance criteria for CPU Scheduling Algorithms ?
  - (e) Explain how resources are utilized by Process.
  - (f) Explain Time Sharing System.
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3673]-402**

**B. C. A. ( Semester - IV ) Examination - 2009**

**VISUAL BASIC**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1)** Check whether the following section codes are correct. Give output and suitable explanation for the outputs : **(Any Four)** **[20]**

(a) Dim strName = "Hello World"

Form1.cls

Form1.print InstrRev (strName, "Hello")

(b) Dim. no

no = InputBox ("Enter an Integer greater than 0");

no = no \* no;

Do

print no

no = no \* no

Loop while (no < 100)

What will be the output if the user enter ?

(1) 2 and (2) 4 ?

- (c) Dim MyInst As Integer  
 MyInst = CInst (257.789)  
 Form1.Print MyInst  
 What is the output ?
- (d) Dim readvalue As Integer  
 Open "ABC.txt" for Random As # 1 Len = 5  
 Get # 1, 3, readvalue  
 MsgBox "Record of ABC.txt contains" and readvalue  
 Close # 1  
 Assume ABC.txt having 5 records.
- (e) Dim k As Integer  
 For k = 97 to 112  
 If k MOD 2 = 0 then  
     print chr(k)  
 end if  
 Next k

**Q.2) Explain the following property settings : (Any Five) [15]**

- (a) Explain Large Change and Small Change Property Scrollbars.
- (b) Taborder and Tabstop of Command Button.
- (c) To add items on the list box design time.
- (d) Property used for changing the font of text box.
- (e) Property used to display border around the Label.
- (f) Property used for means checkbox is not available at this time.
- (g) Property used to disable all the controls in frame.

**Q.3)** Use two command buttons 'Perfect' and 'Factorial' and other necessary controls to accept required values. Write user define function to calculate factorial and perfect no checking. [10]

**OR**

**Q.3)** Take a list box, text box on a form. Add 5 date functions in the list box at run time. When user selects any of the date function from the list box, the output should be displayed in the text box. [10]

**Q.4)** Solve the following : (Any Four) [20]

- (a) Write a function named valid\_password that accepts a string as a parameter and returns a Boolean value depending on whether or not the given string is a valid\_password.
- (b) What are Control Arrays ? Explain with the help of a suitable example.
- (c) Discuss various events related with Mouse.
- (d) Name and describe three styles of Combo Box.
- (e) Write a program to calculate power  $x^n$  where  $x$  and  $n$  both are integers and are taken as parameters of the function.
- (f) Write difference between Option Button and Check box Controls.

**Q.5)** Write short notes on : (Any Three) [15]

- (a) Inline Error Handling
- (b) MDI Form :
- (c) Predefined Dialog Boxes
- (d) Keyboard Events
- (e) Slider Control
- (f) Debugging Tools

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3673]-403**

**B. C. A. ( Semester - IV ) Examination - 2009**

**SOFTWARE ENGINEERING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) All questions are compulsory.*
  - (2) Black figures to the right indicate full marks.*
  - (3) Neat diagrams must be drawn wherever necessary.*
- 

**Q.1)** Indian Railways, the second largest Railway System in the world, operates nearly 7,800 passenger services a day (including suburban services) to move about 11 million people over a route-length of approximately 62,660 kilometers. For administrative convenience Indian Railways is presently divided into various zones as Central, Eastern, Northern, North-Eastern, North-East Frontier, South Central, South-Eastern and Western.

Large number of people use the services provided by Indian Railways. Reservations as well as cancellations of Reservation must be done quickly by the system. So the system must be on-line.

Passengers need to reserve their seats in advance for the desired journey. Passengers who want to reserve tickets are provided with reservation forms. Passengers have to specify the journey details like train number, start and destination stations, seats required, class and details like name, age, sex etc.

- (a) Draw E-R Diagram. **[07]**
- (b) Design a Context Level and First Level Diagram. **[08]**
- (c) Design Structure Chart for Railway System. **[05]**

**Q.2)** An insurance company uses the following rules to determine eligibility of a driver for insurance. The driver will be insured only if any of the following conditions is satisfied :

- (1) The driver's annual income is more than Rs. 20,000 and he is a married male.
- (2) The driver's annual income is more than Rs. 20,000 and he is married and over 30.
- (3) The driver's annual income is Rs. 20,000 or less and the driver is a married female.
- (4) The driver is a male and over 30.
- (5) The driver is married and is 30 or below 30.

In all other cases the driver is not insured.

Construct a Decision Tree for the above cases. **[10]**

**Q.3)** To record Book details, design a suitable screen layout with the following details for a Library Management System :

- (1) Name and Address of Supplier
- (2) Discount and Mode of Payment
- (3) Book Details

State various validations and checks to be provided. **[10]**

**Q.4)** Comment on "System Analyst acts like a bridge between Customer and Software Development Team." **[10]**

**Q.5)** (A) Explain Spiral Model in detail. **[07]**

(B) Write a note on Basic Elements of a System. **[03]**

**Q.6)** Write short notes : **(Any Four)** **[20]**

- (a) Components of Object Oriented Model
- (b) Principles of Good Code Design
- (c) Normalization
- (d) Components of Data Dictionary
- (e) Characteristics of Process Modelling

Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3673]-404**

**B. C. A. ( Semester - IV ) Examination - 2009**

**HUMAN RESOURCE MANAGEMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1)** What do you understand by the term HRM and PM ? Explain difference between HRM and PM. **[15]**

**Q.2)** Define Collective Bargaining. State and explain Process of Collective Bargaining. **[15]**

**Q.3)** Explain various sources of Recruitment along with the merits and demerits. **[15]**

**Q.4)** What is HRP ? Explain process of HRP. **[15]**

**Q.5)** Explain the concept of Career Planning in details. **[15]**

**Q.6)** Write short notes : **(Any Four)** **[20]**

- (a) Off the Job Training Methods
  - (b) Succession Planning
  - (c) Dispute Settlement Bodies
  - (d) Selection
  - (e) Importance of Retention of Employees
  - (f) Role of HR Manager
- 

**[3673]-404/1**



**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 2**

**[3673]-405**

**B. C. A. ( Semester - IV ) Examination - 2009**

**ORACLE**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

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**Q.1) For the following tables, write SQL commands : (Any Ten) [20]**

Table : Movie (mvno, mvname, release, year)

Table : Actor (actno, actname, rate)

Movie table : mvno is primary key and actno is foreign key.

Actor Table : actno is primary key.

- (1) Arrange records of movies in descending order of name.
- (2) Display name, release year of movies whose name starts with 'A'.
- (3) List names of movies released in the year 2008.
- (4) Display name of Actors acting in a movie 'Shole'.
- (5) Display actors list whose rate is greater than 20,00,000.
- (6) Display name of actor who is getting maximum rate in the year 2007.
- (7) List all movies whose release year falls between 1999 and 2005.  
(Both inclusive)
- (8) Raise rate of actor by 20%.
- (9) Display rate of 'Rani Mukharji' to act in movie 'Black'.
- (10) Delete records of actor whose name is 'Akshay Kumar'.
- (11) List actorwise list of movies.
- (12) Display total number of movies, the actor has acted in.

**Q.2) Write short notes : (Any Three) [15]**

- (a) Views
- (b) Group Function
- (c) Locks in Oracle
- (d) DDL

**Q.3) Explain the following : (Any Three) [15]**

- (a) Joins in Oracle
- (b) Constraints (primary, unique, check, not null, on delete, cascade)
- (c) Implicit / Explicit Cursor
- (d) Data Types of SQL

**Q.4) (A) Explain Exception Handling with example. [05]**

**(B) Explain any five Report Writing Commands in SQL. [05]**

**Q.5) Attempt the following : (Any Four) [20]**

- (a) Write a PL/SQL block which prints the sum of 1 to 10 numbers.
- (b) Write a trigger which will restrict clients age. Age should be greater than 18.
- (c) Write a PL/SQL block to accept deptno from user and display dept details. (Handle necessary exceptions).
- (d) Write a cursor to display subject-wise names of all students.
- (e) Write a PL/SQL block to raise the salary for all employees working as 'Analyst' by 15%, using cursor.

Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3673]-501**

**B. C. A. ( Semester - V ) Examination - 2009**

**DATA COMMUNICATION AND NETWORKING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

- (1) Question No. 1 is compulsory.*
- (2) Attempt **any four** questions from Q. Nos. 2 to 6.*
- (3) Questions 2 to 6 carry equal marks.*
- (4) Draw neat diagrams wherever necessary.*

- 
- 
- Q.1)** Explain why the connectivity devices are needed in a Network ?  
Explain these devices in detail. **[20]**
- Q.2)** Explain working of Web-server. **[15]**
- Q.3)** Explain classification of Network. **[15]**
- Q.4)** Explain different modulation methods used for Data Communication. **[15]**
- Q.5)** Explain ethernet with reference to types, cables, topologies and protocols. **[15]**
- Q.6)** Write short notes : **[15]**
- (a) Shell
  - (b) Co-axial Cable
  - (c) Wireless Fidelity

Total No. of Questions : 6]

[Total No. of Printed Pages : 3

**[3673]-502**

**B. C. A. ( Semester - V ) Examination - 2009**

**WEB DESIGN AND INTERNET PROGRAMMING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) Question No. 1 is compulsory.
- (2) Solve **any 4** from the remaining.
- (3) Figures to the right indicate full marks.
- (4) State assumptions wherever necessary.

---

---

**Q.1) Write short notes : (Any Four)**

**[20]**

- (a) W3C
- (b) Style Sheets
- (c) Date Functions in VB Script
- (d) Image Mapping
- (e) Global.asa

**Q.2) (A) Write HTML Code to display the following table :**

**[10]**

Oct 2009		V				
Sun	Mon	Tues	Wed	Thur	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

**(B) Write short note on Working of ASP.**

**[05]**

**Q.3) (A)** Write HTML and Javascript Code to accept information :

**Simple Form Processing**

Name	<input style="width: 60%;" type="text"/>
Password	<input style="width: 60%;" type="password"/>
First Name	<input style="width: 60%;" type="text"/>
Last Name	<input style="width: 60%;" type="text"/>
Gender :	<input checked="" type="radio"/> Male <input type="radio"/> Female
Age	<input style="width: 30%;" type="text"/>
City	<input style="width: 60%;" type="text"/>
State	<input style="width: 60%;" type="text"/>
Country	<input style="width: 60%;" type="text"/>
<div style="display: inline-block; border: 1px solid black; padding: 5px 10px; margin: 5px;">Submit</div> <div style="display: inline-block; border: 1px solid black; padding: 5px 10px; margin: 5px 20px;">Reset</div>	

Validate textboxes and display accepted information. **[10]**

(B) Write ASP code using VBScript to print number and its factorial of 1 to 10. **[05]**

**Q.4) (A)** Write a VBScript Code to accept number and check whether number is palindrome or not. **[05]**

(B) (i) Write Java Script Code to print minimum and maximum from given array of n numbers. **[10]**

**OR**

(ii) Write Java Script Code to print reverse of given number. **[10]**

**Q.5)** Create a screen in ASP as Feedback from the user visiting your website. Accept necessary information from the user, store in database and display message containing the counter, as the Id of user :

(Database : user.mdb)

Make necessary validations. **[15]**

**Q.6)** Write an ASP Code that accepts vencode, venname, venaddr, date\_of\_visit from the user and stores in vendor\_master table.

Design necessary HTML code.

(Database : Vendor\_master.mdb)

**[15]**

**OR**

**Q.6)** Write an ASP Code to display all project details on screen. Code must accept project\_id, project\_name, start\_date, end\_date and then display when the user presses 'Display' button.

**[15]**

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Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3673]-503**

**B. C. A. ( Semester -V ) Examination - 2009**

**MATERIALS MANAGEMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

*(1) Question No. 6 is compulsory.*

*(2) Solve **any three** questions from the remaining.*

- 
- 
- Q.1)** (A) Define Materials Management. State objectives of Materials Management. [10]  
(B) Discuss principles of Material Handling. [10]
- Q.2)** (A) What is Forecasting in Materials Management ? Describe its any two methods. [10]  
(B) Elaborate Cost associated with Inventory. [10]
- Q.3)** (A) “Computer plays a vital role in effective Material Management.” Comment. [10]  
(B) State factors affecting MRP. [10]
- Q.4)** (A) What do you mean by EOQ ? Derive its formula. [10]  
(B) Explain Concept of Standardization alongwith types. [10]
- Q.5)** (A) Describe Import Procedure for Materials. [10]  
(B) What are the points you will keep in mind while designing a warehouse for automobile industry and selecting its layout ? [10]

**Q.6) Write short notes : (Any Four)**

**[20]**

- (a) Bin Card
  - (b) Advantages of Material Handling
  - (c) Functions of Purchase Department
  - (d) FIFO
  - (e) Conveyer Belt
-



Total No. of Questions : 5]

[Total No. of Printed Pages : 4

**[3673]-504**

**B. C. A. ( Semester -V ) Examination - 2009**

**C++ AND OOP**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

*(1) All questions are compulsory.*

*(2) Figures to the right indicate full marks.*

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**Q.1) Attempt any four of the following :**

**[20]**

- (a) What is Object Oriented Programming ? Explain how it differs with Procedure Oriented ?
- (b) Explain Constructors in C++. Discuss some special characteristics of Constructor.
- (c) Explain Operator Overloading. What type of Polymorphism Operator Overloading is ?
- (d) What is Virtual Base Class ? Why we need them in case of Hybrid Inheritance ?
- (e) What is the difference between opening a file with a constructor function and opening a file with open( ) function ? When is one method preferred over the other ?

**Q.2) Define the following : (Any Five) [10]**

- (a) Reference Operator &
- (b) Friend Function
- (c) Copy Constructor
- (d) Abstract Class
- (e) This Pointer
- (f) Encapsulation

**Q.3) Attempt any three of the following : [15]**

- (a) Explain Inheritance. What are different forms of Inheritance ?
- (b) Discuss various OOPs concepts in brief.
- (c) Explain various access specifiers in C++.
- (d) What do we mean by Overloading of a Function ? When do we use this concept ?

**Q.4) Write C++ programs for the following : (Any Five) [25]**

- (a) Define a class to represent Student. Include following members :

<b>Data Member</b>	<b>Member Function</b>
(1) Name of Student	(1) To assign values
(2) Course	(2) To display content
(3) Mark of Sub1	(3) To calculate Total and Percent
(4) Mark of Sub2	
(5) Mark of Sub3	
(6) Total	
(7) Percentage	

Write an array of 5 students to do so.

- (b) Define a Class String ? Use overloaded == operator to compare two strings.

- (c) Create a class time having data members hours and minutes, also define constructors to assign objects and create friend function sum( ) to add two objects. Display sum by using display member function.
- (d) Create a base class shape. Use this class to store two double type values that could be used to compute area of figure. Derive two specific classes called triangle and rectangle from the base shape. Add to the base class, a member function get\_data( ) and display\_area( ) to compute and display area of figures, display\_area( ) will be the virtual function and redefine this function in derived classes accordingly.
- (e) Write an interactive, menu driven program that will access the file invent. Create a class inventory having (Itemname, Itemcode, cost and member function getdata( ) and putdata( )). Menu should perform the following tasks :
  - (i) Add Item
  - (ii) Delete Item
  - (iii) Display Item
- (f) Write a program to explain overloaded constructors.

**Q.5)** Explain output of the following :

**[10]**

```
(a) #include <iostream.h>
class A
{ public :
    virtual void f1( )
        {cout <<"Base\n";}
    ~A( ) {cout <<"Base Destructor\n";}
};
class B : public A
{ public :
    virtual void f1( ) {cout <<"Derived\n";}
    ~ B( ) {cout << "Derived Dstr\n";}
};
```

```

main ( )
{   A * P = new B;
    P->f1( );
    delete P;
}

(b) #include <iostream.h>
class Integer
{   int item;
    public :
        Integer (int k = 0)
        {item = k;}
        Integer (Integer & I)
        {item = I.item;}
        Integer Operator ++( )
        {return (++item);}
        Integer operator ++ (int x)
        {return (item ++);}
        void put( )
        {cout <<"\n item="<< item;}
};

int main( )
{   Integer i1, i2, i3(4);
    i1.put( );
    i2 = ++i3;
    i2 = put( );
    i3.put( );
    i2 = i3++;
    i2.put( );
    i3.put( );
    return(0);
}

```

Total No. of Questions : 5]

[Total No. of Printed Pages : 2

**[3673]-601**

**B. C. A. ( Semester - VI ) Examination - 2009**

**ADVANCED NETWORKING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) Answer the following : (Any Three) [15]**

- (a) Explain IP Addressing in detail.
- (b) What are ATM Service Categories ? List them and explain any two of them.
- (c) Discuss ATM Cell Header.
- (d) Discuss Internet Routing Protocol.

**Q.2) Answer any three of the following : [15]**

- (a) Discuss PNNI Signaling.
- (b) What is Topology ? Discuss different types of Topologies.
- (c) Discuss comparison of TCP/IP and OSI Models.
- (d) What is Cryptography ? Explain Public Key and Secret Key Cryptography.

**Q.3) Solve any two : [20]**

- (a) Explain RSA Algorithm with example.
- (b) Discuss Multicast Routing.
- (c) What is Subnet Mask ? How it is used ?

**Q.4)** What is Lossless Data Compression ? Explain Huffman Codes in Lossless Data Compression. **[10]**

**Q.5)** Write short notes : (**Any Four**) **[20]**

- (a) Hypertext and Hypermedia
  - (b) Computer Security
  - (c) Congestion Control
  - (d) Internet Control Message Protocol
  - (e) Channel Speed and Bit Rate
-

**Total No. of Questions : 5]**

**[Total No. of Printed Pages : 2**

**[3673]-602**

**B. C. A. ( Semester - VI ) Examination - 2009**

**MULTIMEDIA**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

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**Q.1) Discuss various Multimedia Software Tools. [10]**

**Q.2) Solve any three : [15]**

- (a) Explain Properties of Hypertext / Hypermedia.
- (b) Distinguish between GIF 87a and GIF 89a.
- (c) What is General MIDI Specifications.
- (d) Explain Components of Multimedia.

**Q.3) Solve any three : [15]**

- (a) What is Sound ? Explain types of Sound Waves. Discuss characteristics of Sound.
- (b) Explain any two Output Devices.
- (c) Discuss 8-bit Color Images.
- (d) What is Animation ? Explain types of Animation.

**Q.4) Solve any four : [20]**

- (a) State different applications of Multimedia.
- (b) What is Synthesizer ? Discuss characteristics of Synthesizers.
- (c) Discuss Digital Audio Tape.
- (d) Discuss Technical Design Issues.
- (e) What is Optical Disk ? Discuss advantages of Optical Storage.

**Q.5) Write short notes : (Any Four)**

**[20]**

- (a) DVD - Video
  - (b) TIFF File Format
  - (c) Colour Printer
  - (d) Storyboarding
  - (e) Analog Vs. Digital Signal
-



Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3673]-603**

**B. C. A. ( Semester - VI ) Examination - 2009**

**MARKETING MANAGEMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

*(1) Question No. 1 is compulsory.*

*(2) Attempt **any 4** out of the remaining.*

---

**Q.1) (A) Define ‘Marketing Channels’ and their role in Comparative Market. [10]**

**(B) Discuss various steps involved in ‘Marketing Research Process’. [10]**

**Q.2) Explain various factors which influence Consumer’s Buying Behaviour. [15]**

**Q.3) What do you mean by ‘Services’ ? What are the characteristics of ‘Services’ ? [15]**

**Q.4) Point out differences between Marketing and Selling. [15]**

**Q.5) Discuss ‘Product Positioning’ and its key elements. [15]**

**Q.6) How is Global Marketing different from Domestic Marketing ? Discuss. [15]**

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**[3673]-603/1**

Total No. of Questions : 5]

[Total No. of Printed Pages : 4

**[3673]-604**

**B. C. A. ( Semester -VI ) Examination - 2009**

**JAVA**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

**Q.1) Attempt any four of the following :**

**[16]**

- (a) “Java is Platform Independent Language.” Justify.
- (b) Explain similarities and differences between Interfaces and Classes.
- (c) Write a note on Event Handler in AWT with the help of an example.
- (d) Explain difference between Early Binding and Late Binding.
- (e) What is Package ? Illustrate with the help of suitable example.

**Q.2) Answer any four :**

**[16]**

- (a) What is Thread ? Explain Thread Life Cycle in detail.
- (b) Explain any four String Manipulation Functions with suitable examples.
- (c) When do we declare Method or Class as an Abstract ? Give an example.
- (d) What is an Exception ? Explain try-catch block with example.
- (e) Explain various types of JDBC Drivers.

**Q.3) Attempt any four :**

**[16]**

- (a) Write a note on :
  - (i) Hash Table
  - (ii) Vector
- (b) State purpose of various JDBC Classes and Interface :
  - (i) Statement
  - (ii) Connection
  - (iii) Result Set
  - (iv) Driver Manager
- (c) Explain different methods of Mouse Listener.
- (d) What is Type Casting ? How it is implemented in Java ?
- (e) What is an Array ? Explain different ways to initialize Array.

**Q.4) Attempt any four :**

**[16]**

- (a) Write a Java program to find out maximum of array elements and check for array limit. (Use exception handling)
- (b) Create a package vehicle which will have 2 classes as class two-wheeler and four-wheeler. Two-wheeler with method disp. (cc, price), Four-wheeler with method show (regno., regyear).
- (c) Write JDBC program that inserts following details to employee table :

empno empname, empsal

- (d) Write a Java program to display following structure :

```

      *
    *  *  *
  *  *  *  *  *
*  *  *  *  *  *  *
```

- (e) Write a Java program which will display name and priority of current Thread. Change name of Thread on My Thread and set the priority to 2 and display it on screen.

**Q.5) (A)** Trace the output :

**[08]**

(a) Class Thread1 extends Thread

```
{  
    public void run()  
    {  
        system.out.print\n (“Begin”);  
        suspend( );  
        resume( );  
        system.out.print\n (“End”);  
    }  
}
```

Class ThreadTest

```
{  
    public static void main (string args[])  
    {  
        Thread1 T1 = new Thread1 ();  
        T1.start();  
    }  
}
```

(b) Class Static

```
{
    static int m =  ;
    static int n =  ;
    public static void main (string args[])
    {
        int m = 10;
        int x = 20;
        {
            int n = 30;
            system.out.print\n ("m + n =" + m + n);
        }
        x = m + n;
        system.out. print\n ("x =" + x);
    }
}
```

(B) Attempt **any two** of the following : **[08]**

- (a) Write a program to add two numbers using two text fields to take user input and display result in third text field.
- (b) Write a program in Java which will print all Armstrong Numbers between 1 to 500.
- (c) Write a program in Java which accepts two strings using command line argument. Concatenate these strings without using standard method.