

**MADRAS CHRISTIAN COLLEGE (Autonomous)**  
**B.C.A. Degree Examination April 2016**  
**Allied Mathematics I**

Time: 3 Hours

Semester : I

Max: 100 Marks

04/AN

**Section A (10 x 2 = 20 marks)**

**Answer All Questions**

1. Find the rank of the matrix  $\begin{pmatrix} 1 & 1 & -1 \\ 3 & -2 & 3 \\ 2 & -3 & 4 \end{pmatrix}$ .

2. Write Cayley Hamiltonian theorem.

3. If  $\sqrt{5} + \sqrt{2}$  is a root of a fourth degree polynomial, Write the remaining roots.

4. Define reciprocal equation.

5. If  $y = x^{-3} + 6x^3 + 5$ , Find  $\frac{dy}{dx}$ .

6. If  $y = a \cos(\log x) + b \sin(\log x)$ , Find  $\frac{dy}{dx}$ .

7. Evaluate  $\int \frac{dx}{x^2 + 2x + 5}$

8. Evaluate  $\int \log x dx$

9. Form a differential equation by eliminating the arbitrary constant  $m$  from  $y = e^{mx}$ .

10. Solve  $\frac{dy}{dx} + y = 1$ .

**Section B (5 x 8 = 40 marks)**

**Answer Any Five Questions**

11. Verify Cayley Hamilton theorem for the matrix  $\begin{pmatrix} 1 & 1 & 3 \\ 5 & 2 & 6 \\ 2 & -1 & -3 \end{pmatrix}$ .

$$4x + 3y + 6z = 25$$

12. Examine the consistency of the system of the equations  $x + 5y + 7z = 13$  and if

$$2x + 9y + z = 1$$

consistent solve them.

13. Solve the equation  $x^3 - 4x^2 - 3x + 18 = 0$  given that two of its roots are equal.

14. If  $y = -x^3 \log x$ , Find the value of  $x \frac{d^2y}{dx^2} - 2 \frac{dy}{dx} + 3x^2$

15. Find the  $n^{\text{th}}$  derivative of  $\frac{2x+1}{(2x-1)(2x+3)}$ .

16. Evaluate  $\int \frac{(x^2 + 2x - 1)dx}{\sqrt{x}}$ .

17. Evaluate  $\int \frac{2x+3}{x^2 + 5x + 7} dx$ .

18. Solve  $yx^2 dx + e^{-x} dy = 0$ .

**Section C(2x 20 = 40 marks)**

**Answer Any Two Questions**

$$x - 3y - 8z + 10 = 0$$

19. a) Solve by matrix inversion method  $3x + y = 4$

$$2x + 5y + 6z = 13$$

b) Find the eigen values and eigen vectors of the matrix  $\begin{pmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{pmatrix}$ .

20. a) Solve the equation  $4x^4 - 20x^3 + 33x^2 - 20x + 4 = 0$ .

b) If  $y = e^{a \sin^{-1} x}$ , Prove that

$$(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - (n^2 + a^2)y_n = 0.$$

21. a) Evaluate  $\int \frac{dx}{12 + 13 \cos x}$

b) Solve  $(1+x^2)\frac{dy}{dx} + 2xy = \cos x$ .

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**MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)**  
SELF FINANCED STREAM

B.C.A DEGREE – END OF SEMESTER EXAMINATION APRIL 2016  
Class & Group: B.C.A. COMPUTER APPLICATIONS  
Time :3hrs SEMESTER-I MARKS:100

02/A<sup>A</sup>

Title of the Paper : Computing Environment – U.G. – 084CS1M02

Part – A

Answer all the questions

(10 X 2 = 20)

1. Write the general purpose utilities command in UNIX
2. How to identify the current directory in UNIX.
3. Write the basic file attributes in UNIX.
4. Write the use of Shell programming.
5. Write the use of footers and headers in MS-Word.
6. What is slide master?
7. List any two logical functions in MS-Excel.
8. Write the uses of grouping and ungrouping a picture.
9. What is modem?
10. List the various internet browsers.

Part – B

Answer any five questions

(5 X 8 = 40)

11. Explain the UNIX command structure.
12. Write the difference between internal commands and external commands in UNIX.
13. Discuss about vi editor.
14. Write the uses of find and replace in MS-Word.
15. Write the applications of Spread sheets.
16. Discuss the uses of data filtering.
17. Discuss the various charts used in Power point.
18. Explain the uses of email and www.

Part – C

Answer any two questions

(2 X 20 = 40)

19. Explain the features and benefits of UNIX.
20. Prepare a mail merge document using MS-Word to sent new year greeting to your friends
21. Discuss any ten MS-Excel functions with example.

**MADRAS CHRISTIAN COLLEGE (Autonomous)**  
**SELF FINANCED STREAM**  
**BCA DEGREE END OF SEMESTER EXAMINATIONS,**  
**CLASS & GROUP: BCA-COMPUTER APPLICATIONS April/May-2016**  
**Sub.Code: 084CS1M01**  
**TITLE OF PAPER: DIGITAL CIRCUITS (084CS1M01)**

**TIME: 3 Hrs**

**SEMESTER-I**

**Max.Marks:100**

**SECTION-A**

**(10\*2=20)**

Answer ALL the Questions

1. Convert  $(19.625)_{10}$  to its equivalent Binary Number.
2. Give the 1's and 2's complements forms for the following binary numbers.  
a) 10011      b) 110011
3. Define Associative law.
4. What is meant by K-Map?
5. What is meant by PLA?
6. Define Encoder.
7. Define flip-flops.
8. Draw truth table for D flip-flop.
9. Define Registers.
10. What is Memory Unit?

**SECTION-B**

**(5\*8=40)**

Answer any FIVE Questions. Each Question carries Eight Marks

11. Convert the following binary numbers to Octal numbers.  
a)  $(10100)_2 = (?)_8$       b)  $(1000101)_2 = (?)_8$
12. Discuss basic theorems and properties of Boolean algebra.
13. Simplified expressions in Product of sum.  
 $F(A, B, C, D) = \prod (3, 4, 6, 7, 11, 12, 13, 14, 15)$
14. With neat diagram and explain Full Subtractor.
15. Compare Multiplexers and De-Multiplexers.
16. Write short notes on JK-Flip-Flop.
17. Explain Triggering of flip-flops.
18. Write short notes on Timing sequence and Synchronous Counters

**SECTION-C**

**(2\*20=40)**

Answer any TWO of the following. Each question carries 20 marks.

19. Simplify the following Using K-Map  
 $F(A, B, C, D) = \sum (0, 1, 3, 5, 7, 9, 11, 12, 13, 14, 15)$
20. Draw a neat diagram and explain Half Adder and Full-Adder.
21. Explain Ripple Counter and Synchronous Counter with neat diagram.

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**MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)**  
**SELF FINANCED STREAM**  
**B.C.A. DEGREE END OF SEMESTER EXAMINATIONS APRIL 2016**

TITLE OF THE PAPER: DATABASE MANAGEMENT SYSTEMS (084CS5m01)

**TIME: 3 HRS** **SECTION - A** **MAX.MARKS:100**  
*22/Aw*

**ANSWER ALL THE QUESTIONS**  **$10 * 2 = 20$**

1. Define Database.
  2. What is the purpose of primary key?
  3. List the types of relationships.
  4. Define attribute.
  5. What is integrity constraint?
  6. Define trigger.
  7. Write the basic structure of SQL SELECT command.
  8. Define transaction.
  9. Define schema.
  10. What is data independence?

**SECTION – B**  $5 * 8 = 40$

### **ANSWER ANY FIVE QUESTIONS**

11. a) List the disadvantages of file processing system. (5)  
b) Write about the types of views (3)

12. Explain the Role of DBA.

13. Explain the types of join operations with an example.

14. a) List out the forms of authorization in database (4)  
b) Write about the properties of transaction. (4)

15. Explain DISTINCT, GROUPBY and ORDER BY with example.

16. Explain Set operations.

17. a) Write about the states of transaction (4)  
b) Discuss on locking modes. (4)

18. Write about aggregate Operators (8)

SECTION – C  $2 * 20 = 40$

**ANSWER ANY TWO QUESTIONS**

19. Discuss about the structure of database (20)  
20. a) Discuss in detail about different DML Commands in SQL (15)  
      b) List the database models (5)  
21. Explain about different normal Forms? (20)

**MADRAS CHRISTIAN COLLEGE (Autonomous)**

**SELF FINANCED STREAM**

**BCA DEGREE END OF SEMESTER EXAMINATIONS,**

**CLASS & GROUP: BCA-COMPUTER APPLICATIONS April/May-2016**

**Sub.Code: 114CS1M01**

**TITLE OF PAPER: DIGITAL CIRCUITS**

**TIME: 3 Hrs**

**SEMESTER-1**

**Max.Marks:100**

**29/A&I**

**SECTION-A**

**(10\*2=20)**

**Answer ALL the Questions**

1. Convert Binary  $(1001001.011)_2$  to Decimal.
2. Define Complements.
3. Draw the graphic symbol of NAND and NOR logic gates.
4. State Demorgan's Theorem.
5. Define Encoder.
6. What is Multiplexer?
7. What is meant by flip-flops?
8. Write any three flip-flops.
9. What is meant by Register?
10. Define Shift registers.

**SECTION-B**

**(5\*8=40)**

**Answer any FIVE Questions. Each Question carries Eight Marks**

11. Solve the following Binary into its equivalent Octal and Hexa decimal

i).  $(101011100)_2$       ii).  $(110111100100)_2$

12. State and prove Demorgan's theorem

i).  $\overline{AB} = \overline{A} + \overline{B}$   
ii).  $\overline{A + B} = \overline{A} \cdot \overline{B}$

13. Simplify the following Boolean functions to a minimum number of literals.

a)  $(x + y)(x + y')$       b)  $y(wz' + wz) + xy$

14. Explain the functioning of a Full-adder.

15. Discuss on De-Multiplexer with neat diagram.

16. Describe about JK-Flip-Flop.

17. Explain detail about D Flip-flop.

18. Describe about Encoder Circuit.

**SECTION-C**

**(2\*20=40)**

**Answer any TWO of the following. Each question carries 20 marks.**

19. Solve the following Boolean function using K-Map method.

i).  $F(w, x, y, z) = \sum(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$       ii).  $F(x, y, z) = \sum(0, 2, 4, 5, 6)$

20. Explain the following: (i) Half Subtractor and Full Subtractor. (ii). Binary parallel adder.

21. Describe about Register with parallel Load and Serial transfer.

MADRAS CHRISTIAN COLLEGE( AUTONOMOUS)  
SELF FINANCED STREAM  
BCA DEGREE END OF SEMESTER EXAMINATION APR- 2016  
GROUP/BRANCH:BCA  
TITLE OF THE PAPER: INTRODUCTION TO COMPUTER & INFORMATION TECHNOLOGY

Time:3 hrs

06/FN

SEMESTER: I & II

SECTION-A

Max Marks:100

(10x2=20)

ANSWER ALL QUESTIONS

1. Define software.
2. What is a register?
3. Mention any two input devices
4. What do you mean by plotter?
5. Define OS
6. What is a spreadsheet?
7. Expand MODEM?
8. Mention the types of network
9. Define internet.
10. What is a web page?

SECTION -B

(5x8=40)

Answer any five questions

11. Explain application software in detail
12. Explain secondary storage devices in detail.
13. Discuss about any four input devices .
14. Explain Disc operating system in detail.
15. Explain spreadsheet software with example .
16. Mention the types of topologies and Explain
17. Explain about internet addressing.
18. Mention some uses of internet.

SECTION-C

(2x20=40)

Answer any two of the following

19. Explain in detail about main memory and the processor
20. Discuss briefly about the output hardware.
21. Briefly explain about world wide web

**MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)**  
**SELF FINANCED STREAM**  
**B.C.A. DEGREE END OF SEMESTER EXAMINATIONS APRIL -2016**

**TITLE OF THE PAPER: MICROPROCESSORS**

**TIME: 3 HRS**

**05/FN**

**SEMESTER-III**

**MAX.MARKS:100**

**SECTION – A**

**$10 * 2 = 20$**

**ANSWER ALL THE QUESTIONS**

1. Define assembly language.
2. Define Microprocessor.
3. What is the purpose of NOP?
4. Define counter.
5. Define stack.
6. What is interrupt?
7. Define Subroutine
8. How to clear the content of accumulator?
9. What is SIM ?
10. What is the use of XCHG instruction?.

**SECTION – B**

**$5 * 8 = 40$**

**ANSWER ANY FIVE QUESTIONS**

11. With example, classify the instructions according to their size.
12. Discuss about the programming model and flags of 8085 microprocessor
13. Explain all arithmetic operations with example.
14. a) Write a Program for 8 bit Addition  
b) Write a program for 8 bit Subtraction
15. Discuss about compare instructions with example.
16. Explain subroutines.
17. Discuss on restart instructions.
18. Write about the types of interrupts.

**SECTION – C**

**$2 * 20 = 40$**

**ANSWER ANY TWO QUESTIONS**

19. a) Discuss about all the data transfer instructions  
b) Discuss about branch instructions
20. Explain the pin configuration of 8085 microprocessor.
21. a) Discuss on the time delay using register pair in detail (10)  
b) Write about operations on stack. (10)

MADRAS CHRISTIAN COLLEGE ( AUTONOMOUS)

SELF FINANCED STREAM

B.C.A. DEGREE EXAMINATION –APRIL 2016

GROUP / BRANCH B.C.A. COMPUTER APPLICATIONS

SEMESTER : III

TITLE OF THE PAPER : DATA STRUCTURES AND ALGORITHMS (084CS3M01)

TIME : 3 HOURS

SECTION – A

MAX. MARKS : 100 MARKS

05/A

ANSWER ALL THE QUESTIONS:

$10 * 2 = 20$

1. Define the term “Data Structure”.
2. What is an asymptotic notation?
3. What is a Queue?
4. List any two application of stack.
5. What is an ordered list?
6. What is the efficiency of an algorithm?
7. What is a singles linked list?
8. What is meant by ADT?
9. Define binary tree.
10. What is selection sort?

SECTION – B

$5 * 8 = 40$

ANSWER ANY FIVE QUESTIONS:

11. Discuss on representation of stack using array.
12. Explain primitive and composite data type.
13. Explain in detail about the greedy algorithm.
14. Describe PUSH and POP algorithm. Explain the same with example.
15. Write in detail about the Queue operations.
16. Explain with neat sketch the doubly linked list.
17. Describe about Binary tree traversal.
18. Explain the procedure for Merge sort with an example.

SECTION – C

$2 * 20 = 40$

ANSWER ANY TWO QUESTIONS:

19. Explain in detail about divide and conquer algorithm.
20. List out the types of sorting. Explain in detail.
21. Write down the algorithm of Binary search tree. Explain with example.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
SELF FINANCED STREAM  
B.C.A DEGREE END SEMESTEREXAMINATION, APRIL 2016  
CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS.  
TITLE OF THE PAPER- SYSTEM MANAGEMENT - I

Time : 3hrs SEMESTER-III MARKS:100  
04/FN SECTION - A 10 \* 2 = 20

## **ANSWER ALL QUESTIONS:**

1. Define the term end - user.
  2. What is DSS?
  3. Define Questionnaire.
  4. What is decision table?
  5. What are data elements?
  6. What is data dictionary?
  7. Define Ergonomic design.
  8. What is Control?
  9. What are icons?
  10. What is batch processing?

SECTION - B 5 \* 8 = 40

**ANSWER ANY FIVE QUESTIONS:**

11. Describe the different categories of Information systems.
  12. Explain the different type of testing project feasibility.
  13. Briefly describe each of the structure used in structural English.
  14. What are the Components of structured Analysis?
  15. Identify the symbols used in dada flow diagram and explain how each is used.
  16. Write a note on Conform to design Standard.
  17. Write a note on tabular format.
  18. Explain the basic file terminology.

$$\text{SECTION - C} \quad 2 * 20 = 40$$

**ANSWER ANY TWO QUESTIONS:**

19. Explain the SDLC.
  20. What features must be designed? Explain.
  21. How to check and modify the transaction data.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
SELF FINANCED STREAM  
B.C.A DEGREE END SEMESTER EXAMINATION, APRIL 2016  
CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS

TITLE OF THE PAPER: COMPUTER INTEGRATED STATISTICAL METHODS AND  
OPTIMIZATION TECHNIQUES-I

SUBJECT CODE: 084CS3A01  
MAX. MARKS: 100

DURATION : 3 HRS

SEMESTER : III

30/FW

Section - A

Answer all Questions.

$10 \times 2 = 20$

1. What is a multiple bar diagram?
2. Define Ogive.
3. Give the formula for Arithmetic mean.
4. Define mode.
5. Write the properties of correlation coefficient.
6. Write the equations of regression lines.
7. What is interpolation?
8. Write the formula for Newton's divided difference.
9. What is numerical differentiation?
10. Give the formula for Simpson's 1/3 rule.

Section - B

Answer any FIVE.

$5 \times 8 = 40$

11. Draw a subdivided bar diagram from the following data.

Commodities	:	A	B
Price/unit (Rs)	:	3	2
Qty Sold	:	75	100
Value of raw Material :		175	150
Other Expenses	:	30	25
Profit (Rs)	:	20	25

12. Draw a histogram and frequency polygon for the following data.

Mid Value	: 18	25	32	39	46	53	60
Frequency	: 10	15	32	42	26	12	9

13. Find the median for the following data.

No. of days								
Absent(less than): 5	10	15	20	25	30	35	40	45
No. of Students : 29	224	465	582	634	644	650	653	655

14. Find the mode for the following observations.

$$3,5,7,9,7,5,7,6,3,9,5,6,6,3.$$

Numbers	:	3	5	6	7	9	Total
Frequency	:	3	4	3	3	2	15

15. Find the Quartiles Q1, Q3 for the following distribution

Age(yrs)	:	Below 20	20-25	25-30	30-35	35-40	40-45	45-50	55 and above
No. of Employees:	:	13	29	46	60	112	94	45	21

16. Find the polynomial for the following data.

x	:	-4	-1	0	2	5
F(x)	:	1245	33	5	9	1335

17. Use Lagrange's formula to find f(6) for the following data.

X	:	1	2	7	8
F(x)	:	4	5	5	4

18. Evaluate  $\int_0^{\pi} \sin x \, dx$  using trapezoidal rule.

### Section - C

Answer any Two.

2\*20=40

19. The Scores of two players A and B in 12 rounds are given below.

A	:	74	75	78	72	78	77	79	81	79	76	72	71
B	:	87	84	80	88	89	85	86	82	82	79	86	80

Identify the better player and the more consistent player.

20.(a)Find the coefficient of correlation between x and y from the following data.

X	:	10	14	15	28	35	48
Y	:	74	61	50	54	43	26

20. (b)Find the line of regression of y on x.

X	:	1	2	3	4	5	8	10
Y	:	9	8	10	12	14	16	15

21. Evaluate  $\int_0^{10} dx / (1+x^2)$  using (i) Simpson's 1/3 rule (ii) Simpson's 3/8 rule.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
SELF-FINANCED STREAM  
B.C.A DEGREE END OF SEMESTER EXAMINATION  
CLASS & GROUP: B.C.A.  
TITLE: MULTIMEDIA SYSTEMS (I.D)

TIME: 3 Hours

Max marks: 100

09/Aug

SEMESTER-III  
PART - A

Answer all the questions (10×2=20 marks)

1. Define Multimedia.
2. What is meant by Sampling Size?
3. Write the use of Digital Audio Playback.
4. Define MIDI.
5. What is meant by Hyper Text?
6. Define VRAM.
7. What is Object animation?
8. Write the use of Morphing.
9. What is meant by Key Framing?
10. What are full motion videos?

PART - B

Answer Any Five questions (5× 8 =40 marks)

11. Define the multiple facets of multimedia in detail.
12. Explain about the Multimedia Hardware.
13. Discuss about the digital audio editing techniques.
14. Write about the Text in Multimedia.
15. Explain in detail about basic concepts of color displays.
16. Discuss about the computer animation fundamentals.
17. Describe about the Digital video fundamentals.
18. Explain about the video capture techniques in multimedia.

PART - C

Answer Any Two questions (2 ×20=40 marks)

19. Discuss about the various classification of Multimedia and the Multimedia software in detail.
20. Describe in detail about the MIDI fundamentals.
21. Explain in detail about the 2D and 3D animation techniques in detail.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

SELF FINANCED STREAM

B.C.A DEGREE END SEMESTEREXAMINATION, APRIL 2016

CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS.

TITLE OF THE PAPER: SYSTEM MANAGEMENT – II (084CS4AO2)

TIME: 3HRS

SEMESTER -IV

MAX.MARKS:100

25/A/N

Part – A

(10x2=20)

Answer ALL

Give the meaning of:

1. Fixed Asset
2. Subsidiary Book
3. Journal
4. Double Entry System
5. Book Keeping
6. Flexible Budget
7. Ratios
8. Marginal Cost
9. Variable Cost
10. BEP

Part – B

(5x8=40)

Answer any Five

11. Write short notes on the Dual Aspect Concept.
12. Distinguish between Double Entry System and Single Entry System.
13. What are the advantages of Marginal Costing?
14. Write short note on Algorithm.
15. Calculate Gross Profit Ratio from the following:

Particulars	Rs.
Sales	10,00,000
Sales returns	1,00,000
Opening stock	2,00,000
Purchases	6,00,000
Purchase returns	1,50,000
Closing stock	65,000

16. Prepare Trading and P&L A/C from the information given below

Particulars	Rs	Particulars	Rs
Opening Stock	3,600	Rent(factory)	400
Purchases	18,260	Rent (office)	500
Wages	3,620	Sales returns	700
Closing Stock	4,420	Purchase returns	900
Sales	32,000	General expenses	900
Carriage on purchases	500	Discount to customers	360
Carriage on sales	400	Interest from bank	200

17. From the following data calculate P/V ratio, Variable Cost and Profit.

Particulars	Rs.
Sales	80,000
Fixed Expenses	15,000
Break Even Point	50,000

18. A manufacturing company submits the following figures of Product "X" for the 1<sup>st</sup>

Quarter of 2010:

Sales (in units)

January – 50,000

February – 40,000

March – 60,000

Sales Price Per Unit – Rs. 100

Target of 1<sup>st</sup> Quarter 2011:

Sales units increase by 20%

Selling Price increase by 10%

Prepare the Sales Budget.

Part – C

2x20=40)

Answer any TWO

19. Explain the different types of budgets.

20. From the following Trial Balance extracted from the books of Ajith, prepare Trading, P&L A/C and Balance Sheet for the year ended 31/12/2009

Debit Balance	Rs.	Credit Balances	Rs.
Cash at Bank	2,610	Creditors	4,700
Book Debts	11,070	Discounts	150
Salaries	4,950	Creditors for expenses	400
Carriage inwards	1,450	Return outwards	2,520
Carriage outwards	1,590	Sales	80,410
Bad debts	1,310	Capital	40,000
Office expenses	5,100		
Purchases	67,350		
Return inwards	1,590		

Furniture & Fixtures	1,500		
Stock	14,360		
Insurance	3,300		
Depreciation on property	1,200		
Freehold property	10,800		
	1,28,180		1,28,180

#### ADJUSTMENTS

- 1) Make provision for doubtful debts at 5%
  - 2) Calculate discount on creditors @2%
  - 3) Office expenses include stationary purchased Rs.800
  - 4) Carriage inwards include carriage paid on purchase of furniture Rs.50
  - 5) Outstanding salaries Rs.150
  - 6) Prepaid insurance Rs.300
  - 7) Stock on hand Rs.10, 700(including stationery stock Rs.200)
21. From the following data forecast the cash position at the end of September, October, and November 2010.

Months 2010	Sales(Rs.)	Purchases (Rs.)	Wages (Rs.)	Selling Expenses (Rs.)
February	1,20,000	80,000	10,000	7,000
March	1,30,000	98,000	12,000	9,000
April	70,000	1,00,000	8,000	5,000
May	1,16,000	1,03,000	10,000	10,000
June	85,000	80,000	8,000	6,000

#### Further Information:

Sales at 10% realized in the month of sales. Balance equally realized in two subsequent months.

Purchases: creditors are paid in the month following the month of supply.

Wages: 20% paid in arrears in the following month.

Sundry expenses paid in the month itself.

Income Tax Rs.20, 000 payable in November.

Dividend Rs.12, 000 payable in November.

Income from investments Rs.2, 000 received half-yearly in March and September.

Cash balance on hand on 1-04-2010 Rs.40, 000.

**MADRAS CHRISTIAN COLLEGE( AUTONOMOUS)**

**SELF FINANCED STREAM**

**BCA DEGREE END OF SEMESTER EXAMINATION APR-2016**

**GROUP/BRANCH:BCA**

**TITLE OF THE PAPER: SYSTEM MANAGEMENT-II ( 134CS4AO3 )**

**Time:3 hrs**

**SEMESTER: IV**

**Max Marks:100**

**SECTION-A**

**(10x2=20)**

**Answer all questions**

1. What is E-business?
2. Mention the E-commerce business models.
3. List out two advantages of M-commerce.
4. What do you mean by wireless LAN
5. What is B2B E-commerce?
6. Expand EDI.
7. What is threat?
8. Define VIRUS.
9. What are the modes of E-payment?
10. Mention any two advantages of M-payment.

**SECTION -B**

**(5x8=40)**

**Answer any five questions**

11. List out the advantages and disadvantages of E-commerce.
12. Explain the different business models
13. Discuss about the wireless technology employed in M-commerce
14. Write a note on B2B tools
15. Explain B2B models in detail.
16. Discuss about VIRUS
17. Explain biometric system
18. Briefly discuss about the requirements for internet based payment

**SECTION-C**

**(2x20=40)**

**Answer any two of the following**

19. Explain
  - a. Security in cyberspace (10)
  - b. Security protection & recovery(10)
20. Write a note on supply management chain and EDI .
21. How will you pay through internet, Discuss.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
 SELF FINANCED STREAM  
 B.C.A DEGREE END SEMESTER EXAMINATION, APRIL 2016  
 CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS

**TITLE OF THE PAPER: COMPUTER INTEGRATED STATISTICAL METHODS AND  
 OPTIMIZATION TECHNIQUES-II**

DURATION : 3 HRS

SEMESTER : IV

SUBJECT CODE:084CS4A01  
 MAX. MARKS:100

04/FN

**Section – A**

**Answer all Questions.**

**$10 \times 2 = 20$**

1. Define operations research.
2. What is a feasible solution?
3. Define surplus variable.
4. Which element is called a key element in simplex procedure?
5. How do you convert an unbalanced Transportation problem to a balanced problem?
6. What is the other name for unit cost penalty method in solving a transportation problem?
7. Define an Assignment problem.
8. Define a sequencing problem.
9. What is an activity in a network?
10. Mention the time estimates in a PERT network.

**Section – B**

**Answer any FIVE.**

**$5 \times 8 = 40$**

11. Discuss the origin and development of OR.
12. A dietitian wishes to mix 2 types of food in such a way that the vitamin contents of the mixture contains at least 8 units of vitamin A and 10 units of vitamin B. Food I contains 2 units per Kg of vitamin A and 1 unit per kg of Vitamin B. Food II contains 1 unit per kg of vitamin A and 2 units per kg of vitamin B. It costs Rs.5 per kg to purchase food I and Rs.8 per kg to purchase Food II. Formulate a mathematical model.
13. List the characteristics of a LPP in standard form.
14. Find the initial basic feasible solution using Vogel's Approximation Method.

Destinations

	A	B	C	Demand
W1	10	9	8	8
Source W2	10	7	10	7
W3	11	9	7	9
W4	12	14	10	4
Requirement	10	10	8	

15. Solve the following Assignment problem

	Machines			
	W	X	Y	Z
A	11	17	8	16
B	9	7	12	6
C	13	16	15	12
D	14	10	12	11

16. There are 5 jobs each of which go through 2 machines A and B in the order A, B. The processing time (hrs) are given. Determine the optimum sequence.

Job	:	J1	J2	J3	J4	J5	J6
A	:	1	3	8	5	6	3
B	:	5	6	3	2	2	10

17. Draw the network and find the critical path.

Activity	:	1-2	1-3	2-3	2-4	3-4	4-5
Duration(days)	:	20	25	10	12	6	10

18. Distinguish PERT and CPM.

### Section - C

Answer any Two.

2\*20=40

19.(a) Solve graphically. Max  $Z=2x+3y$ ,  
s.t  $2x+y \leq 20$ ,  $x+2y \leq 20$ ,  $x, y \geq 0$ . (10Marks)

(b) Solve using Simplex method.

Max  $Z = 20x_1 + 30x_2$ ,  
s.t  $3x_1 + 3x_2 \leq 36$ ,  $5x_1 + 2x_2 \leq 50$ ,  $2x_1 + 6x_2 \leq 60$ ,  $x_1, x_2 \geq 0$ . (10 Marks)

20. Solve the following transportation problem.

	To			Available
	D	E	F	
A	16	19	12	14
B	22	13	19	16
C	14	28	8	12
	10	15	17	

21. The time estimates of a PERT network are as follows.

(i) Draw the network and determine the critical path.

(ii) Find the probability that the project will be completed 5 days after expected duration.

Activity	1-2	1-3	2-4	2-6	3-4	3-5	4-5	5-6
T <sub>0</sub>	1	5	3	1	8	2	5	2
T <sub>m</sub>	4	10	3	4	15	4	5	5
T <sub>p</sub>	7	17	3	7	26	8	5	8

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
[SELF-FINANCED STREAM]  
B.C.A DEGREE END OF SEMESTER EXAMINATIONS APRIL 2016

GROUP/BRANCH: COMPUTER APPLICATIONS

TITLE OF THE PAPER: [084CS4M01] OPERATING SYSTEMS

Time: 3 Hours

26/FAI

SEMESTER - IV

Max.:100 Marks

**SECTION A (10 × 2=20)**

Answer *ALL* the questions.

1. What is system software?
2. What is PCB?
3. Define critical section.
4. Define monitors.
5. What is deadlock?
6. What is DRAG?
7. Define burst time.
8. What is a system call?
9. What is compaction?
10. What is address binding?

**SECTION B (5 × 8 =40)**

Answer any *FIVE* questions.

11. What is distributed computing? Explain.
12. Briefly explain about process synchronization.
13. Write note on Inter Process Communication.
14. What are the prerequisites of deadlock? Explain.
15. Discuss on preemptive and non-preemptive scheduling.
16. Explain about various levels of job scheduling.
17. List and explain various strategies of storage management.
18. What is page replacement? Explain its policies.

**SECTION C (2 × 20 = 40)**

Answer any *TWO* questions.

19. a) Explain process state transitions with a neat diagram.  
b) Explain banker's algorithm for deadlock avoidance.
20. Briefly explain any four processor scheduling algorithms.
21. a) Write a note on non-contiguous storage allocation.  
b) Write a detailed note on paging and segmentation.

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SELF-FINANCED STREAM  
B.C.A DEGREE END OF SEMESTER EXAMINATION

02/FY

TIME: 3 Hours

Answer All the questions

PROGRAMMING USING C#

SEMESTER-V

PART-A

Max marks: 100

( $10 \times 2 = 20$  marks)

1. Differentiate between Managed Code and Unmanaged Code.
2. Define String Literals.
3. What is usage of Goto statement?
4. List out the Bitwise operators in C#.
5. Define Jagged Array.
6. What is recursion?
7. What is Inheritance?
8. Define Structures.
9. List out any two common exceptions.
10. What is meant by Binary stream?

**PART – B**

Answer Any Five questions

( $5 \times 8 = 40$  marks)

11. Explain the types of Data available in C# along with their range.
12. Write about the type conversion in Expression.
13. Explain the Relational and Logical operators' in C#.
14. Describe about the method overloading with an example.
15. Write notes on Constructors and Destructors.
16. Discuss about the Inheritance in detail.
17. Explain the concept of operator overloading with suitable example.
18. Discuss console I/O stream classes.

**PART – C**

Answer Any Two questions

( $2 \times 20 = 40$  marks)

19. Discuss the various control statements in C# with suitable example.
20. Explain about how the Interface can be implemented in detail.
21. Explain in detail about exception handling mechanism in C#.

# MADRAS CHRISTIAN COLLEGE (AUTONOMOUS) SELF FINANCED STREAM

B.C.A DEGREE END SEMESTEREXAMINATION, APRIL 2016

CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS.

TITLE OF THE PAPER- VISUAL BASIC NET 084CS5M02

Time : 3hrs

SEMESTER-V

MARKS:100

02/AN

## SECTION – A

$$10 * 2 = 20$$

## **ANSWER ALL QUESTIONS:**

1. What is Visual Basic.NET?
  2. Differentiate between VB.NET with Java.
  3. Define Polymorphism.
  4. What is Array?
  5. Write the syntax of FOR statement.
  6. What is namespace in .NET?
  7. Define Message box.
  8. How will you create a password character in a text box?
  9. Write down any two ways how to create a class.
  10. What is overloading in VB. NET?

## SECTION – B

$$5 * 8 = 40$$

**ANSWER ANY FIVE QUESTIONS:**

11. Describe .NET Framework architecture.
  12. What are the methods for adding controls to a Form in VB.NET? Explain.
  13. Explain in detail about IF statement.
  14. Elaborately explain the one-dimensional and two dimensional arrays in VB.NET with example.
  15. Explain with an example the usage of common dialog box.
  16. Explain in detail about Class and Object in VB.NET.
  17. Differentiate Checkbox and Radio button controls with suitable examples.
  18. What is overriding? Explain in detail.

## SECTION – C

$$2 * 20 = 40$$

**ANSWER ANY TWO QUESTIONS:**

19. A) Discuss briefly the features of VB.NET.  
B) Discuss about namespaces in .NET.

20. Explain the Constructors and Destructors with example.

21. Write a note on the following: a) Data grid b) Textbox c) hscrollbar d) combo box.

MADRAS CHRISTIAN COLLEGE(AUTONOMOUS)

SELF FINANCED STREAM

BCA DEGREE EXAMINATION APR - 2016

GROUP/BRANCH:BCA

TITLE OF THE PAPER: WEB DESIGNING (084UC5L03)

Time:3 hrs

SEMESTER: V

Max Marks:100

04/FN

SECTION-A

(10x2=20)

Answer all questions

1. Define network
2. Expand MODEM
3. Mention any two browsers
4. What do you mean by hyper link?
5. What is the use of title element?
6. What tag should be used to align the text.
7. How do you specify a column in HTML?
8. Define CSS
9. What is a frame?
10. Explain form.

SECTION -B

(5x8=40)

Answer any five questions

11. List out some uses of internet
12. How do you create Email, Explain in detail
13. Explain the internet generations in detail.
14. Write a note on general HTML structure
15. Explain nested list
16. Explain embedded style sheet with example
17. Explain ordered and unordered lists in detail
18. Create a sample HTML form with action and method attributes.

SECTION-C

(2x20=40)

Answer any two of the following

19. Write a note on the following
  - a) Internet Browsers
  - b) Internet Addressing.
20. Explain table creation in HTML with example
21. Write a note on frames in detail

## MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

## **SELF FINANCED STREAM**

## B.C.A DEGREE END SEMESTEREXAMINATION, APRIL 2016

## **CLASS AND GROUPS: B.C.A COMPUTER APPLICATIONS.**

## **TITLE OF THE PAPER: WEB PROGRAMMING**

SUB CODE: 084CS6M02

**TIME: 3HRS**

## SEMESTER VI

**MAX.MARKS:100**

## **SECTION – A**

**Answer ALL questions.**

$$(10 \times 2 = 20)$$

1. Define the term Internet.
  2. What is HTML?
  3. How to Put a JavaScript into an HTML Page?
  4. Define operator.
  5. What are events?
  6. Define event object.
  7. What is meant by active server page?
  8. Define request object in ASP.
  9. What is ActiveX Controls.?
  10. Define cookies.

## **SECTION – B**

$$(5 \times 8 = 40)$$

**Answer Any FIVE questions.**

11. Discuss about Ordered Lists and Unordered Lists.
  12. Write a java script program to develop the arithmetic calculator.
  13. What is JavaScript? Explain the advantages of JavaScript.
  14. Discuss the methods of session object.
  15. Write the applications of cookies.
  16. Explain the basic table tags in HTML.
  17. State and explain the types of Control statements in JavaScript.
  18. Explain active server page model.

## **SECTION – C**

$$(2 \times 20 = 40)$$

**Answer Any TWO questions.**

19. What is form? Explain types of form tags with sample program.

20. A. What are the various java script objects? Explain each with an example.(15 Marks)  
B. Write a java script program to print first 100 numbers. (5 Marks)

21. A. Write about operators in JavaScript.  
B. Discuss about input box function and msg box functions in detail.

[SELF-FINANCED STREAM]

B.C.A DEGREE EXAMINATION-APR/MAY-2016

GROUP/BRANCH: COMPUTER APPLICATION

TITLE OF THE PAPER: SOFTWARE ENGINEERING 084CS6M01

TIME: 3 Hrs.

SEMESTER -VI

MAX: 100

22/F/1

SECTION A

(10\*2=20)

**Answer ALL questions**

1. Define a project.
2. List any two advantages of developing a model in software development.
3. Write the abbreviation for SRS.
4. What is cohesion?
5. What is the need for an interface?
6. Define GUI.
7. What is verification?
8. How is the quality of software measured?
9. What is software maintenance?
10. What are CASE tools?

SECTION B

(5\*8=40)

**Answer any FIVE questions**

11. Write a note on the spiral model of software development.
12. Write down the steps involved to prepare SRS.
13. Differentiate object oriented and function oriented design.
14. What are the characteristics of a good user interface?
15. When is software said to be reliable? Discuss.
16. Explain the different types of testing.
17. Write a note on any two CASE tools used in software development.
18. Write a detailed note on the various methods used for requirement gathering.

SECTION C

(2\*20=40)

**Answer any TWO questions**

19. Explain the various phases of software development lifecycle.
20. a. Write a Short note on DFD?
  - b. Write a note on integration testing.
21. a. Discuss in detail the CASE architecture.
  - b. Write down the steps involved to carry out software reverse engineering.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

(SELF FINANCED STREAM)

B.C.A. END OF SEMESTER EXAMINATIONS APRIL-2016

CLASS & GROUP : COMPUTER APPLICATIONS

TITLE : DATA COMMUNICATION AND NETWORKING 084CS6MO5)

TIME :3HRS

SEMESTER-VI

MARKS :100

29/ FA

PART- A

10 X 2 =20

**Answer all the questions.**

1. What is distributed processing?
2. Define protocol.
3. What is meant by throughput?
4. What is a bandwidth?
5. What is burst error?
6. What is bit stuffing?
7. What is a function of a router?
8. What is bridge?
9. What is telnet?
10. Why we need proxy server?

PART - B

5 X 8 =40

**Answer any five Questions:**

11. What is topology? Explain in brief.
12. What are the different types of transmission mode and networks?
13. Briefly explain about the digital signals.
14. Explain about Time division multiplexing.
15. Explain about the packet switching.
16. Explain in brief about error control mechanism.
17. Briefly explain any one of the routing algorithms.
18. Explain about www.

PART -C

2 X 20 =40

**Answer any two Questions:**

19. Define the function of OSI layers.
20. Explain about the guided media in detail.
21. Explain :
  - a. Circuit switching in detail.
  - b. Frequency division multiplexing

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)  
SELF FINANCED STREAM  
B.C.A DEGREE END SEMESTER EXAMINATION APR 2016  
TITLE OF THE PAPER: JAVA PROGRAMMING (084CS6M03)

Time: 3 Hrs

27/FN

Semester: VI

Max Marks: 100

SECTION A

Answer ALL the questions

(10 \* 2 = 20 Marks)

1. What do you mean by Byte Code?
2. What is narrow conversion?
3. What is the output of the modulus operator?
4. What is the use of continue statement?
5. Define finalize() method.
6. What is recursion?
7. Define Method Overriding.
8. How will you set the priority of a thread?
9. What is applet?
10. What are the two methods available in Event object?

SECTION B

Answer Any Five Questions

(5 \* 8 = 40 Marks)

11. Explain in detail about the various data types available in Java.
12. Explain how will use the conditional operators and Bitwise operators with an example.
13. What are the access specifiers available in Java?
14. Write a Java program to check whether a given string is palindrome or not.
15. Discuss the two ways to create a thread.
16. Define Inheritance. Explain with an example.
17. Write briefly about the skeleton of applet.
18. Explain about the various event listener interfaces and its methods.

SECTION C

Answer Any Two Questions

(2 \* 20 = 40 Marks)

19. Discuss about the various operators in java with examples.
20. Explain how you will define user defined packages with an example.
21. Discuss in detail about how will you handle exception in Java.