MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

INTRODUCTIONS TO COMPUTERS AND INFORMATION TECHNOLOGY
(114UC1G01)

SEMESTER I

Time: 3 Hours

Max. Marks: 100

2/ AN

PART – A

Answer ALL questions (10x2=20)

1. What is System software?
2. Write usage of primary storage.
3. Define Optical disks.
4. Compare Impact and Non-impact printers.
5. What is DOS?
6. Define DBMS.
7. State the meaning of ISDN.
8. What is role of Communication Networks?
9. Write usage of Internet.
10. Define WWW

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Explain the RISC and CISC processors.
12. Explain the various Input devices.
13. Write detail about Applications of Spread sheet in Business.
14. Discuss on various types of networks.
15. Explain the various communication media.
16. How to Connect to the Internet? Explain of them.
17. Exemplify various functions in Word processing software.
18. Explain Secondary storage hardware.

PART – C

Answer any TWO of the following questions (2x20=40)

19. Explain the Output hardware and ROM chips.
20. Elaborate the specializations of Windows NT, UNIX and LINUX Operating System.
21. Describe about usage of the web page and Designing web pages.

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B.C.A

INTRODUCTIONS TO COMPUTERS AND INFORMATION TECHNOLOGY
(114UC1G01)

SEMESTER I

Time: 3 Hours **Max. Marks: 100**

3 / AN

PART – A

Answer ALL questions **(10x2=20)**

1. What is Application software?
2. Write usage of Secondary storage.
3. State any four names of input devices.
4. Define the term Tape Storage.
5. What is role of Operating System?
6. Write about Spread sheet.
7. Define ADSL.
8. List out various types of Networks.
9. What is role of Internet address?
10. Define Web pages.

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. Write detail about processor, main memory and registers.
12. Explain the various Output devices.
13. Write detail about Applications of word processing in Business.
14. Explain the Topologies of network.
15. Write about the real time usage of web designing.
16. Explain Satellite system other wireless communication.
17. Write detail about the various Input devices with examples.
18. Explain the System Software and ROM chips.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Explain the CISC, RISC and MPP processors.
20. a) Describe the specializations of Windows 2000 and UNIX Operating System. (12)
    b) Exemplify the Database Management System Software. (8)
21. Explain the following :
    a) Coaxial cable (10)
    b) Internet and its address. (10)

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

Computing Environment - 084CS1M02

SEMESTER I

Time: 3 Hours **Max. Marks: 100**

25 / AN

PART – A

Answer ALL questions **(10x2=20)**

1. What is UNIX?
2. What is man documentation in UNIX?
3. Write the use of VI Editor.
4. List any two file attributes in UNIX.
5. Write the use of format painter in MS Word.
6. What are header and footer in MS Word?
7. Write the use of filter command in MS Excel.
8. Write the use of wrap text in MS Excel.
9. What is a modem?
10. What is internet addressing?

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. Discuss the various general purpose utilities commands.
12. Discuss the file handing commands in UNIX.
13. What is toolbar and icons?
14. Discuss about insert tables in MS Word.
15. Write the uses of conditional formatting in MS Excel.
16. List any five logical built in functions in MS Excel.
17. Discuss the various slide transition in MS Power Point.
18. Explain the various modes of connecting to the Internet.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Discuss the following (a) Features of UNIX 10
    (b) Shell program 10

20. Write short notes on:
    (a) Explain how to create mail merge using MS- Word. 10
    (b) How to prepare various charts 10
21. Discuss the internet technology and various internet browsers.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

DIGITAL CIRCUITS (114CS1M01)

SEMESTER I

Time: 3 Hours

8 /FN

Max. Marks: 100

PART – A

(10x2=20)

Answer ALL questions

1. Define Binary logic.
2. Find the 2's complement of 110010.
3. Define De Morgan's theorem.
4. Compare Minterm and Maxterm.
5. Define the term of MSI and LSI.
6. What is encoder?
7. List out various types of flip-flop.
8. What is meant by Sequential logic?
9. Define Register.
10. What is meant by Shift register?

PART – B

(5x8=40)

Answer any FIVE of the following questions

11. Convert the Decimal (523) to Octal, Binary and Hexadecimal numbers.
12. Explain the basic theorems of Boolean algebra.
13. Draw a neat diagram and explain Full Adder.
14. Draw the logic diagram of Clocked T flip-flop and explain in detail.
15. Explain Serial transfer.
16. Explain the Decoders with neat diagram.
17. Discuss on Binary parallel adder.
18. Explain how a 4 bit binary data can be serially shifted in to a shift Register..

PART – C

(2x20=40)

Answer any TWO of the following questions

19. Simplify the expression in Sum of Products. $F(w, x, y, z) = \sum (0,1, 2, 3, 6, 8, 12, 13, 14)$ and draw the logic diagram for the simplified equation.
20. Explain the following:
    (i) Multiplexers and De-Multiplexer. (10)
    ii). Type of Shift register with neat diagram. (10)
21. Write detail about JK flip-flop and Register with parallel load.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

ALLIED MATHEMATICS I (084CS1A01)

SEMESTER I

Time: 3 Hours

Max. Marks: 100

7 / FN

PART – A

(10x2=20)

Answer ALL questions

1. Define skew symmetric matrix and give an example.
2. State Cayley Hamilton theorem.
3. Form a quadratic equation one of whose roots is $2+i$.
4. If α, β, γ are the roots of $x^3 + px^2 + qx + r = 0$, Find the value of $\sum \alpha^2$.
5. If $y = \frac{x-1}{x+1}$, Find $\frac{dy}{dx}$.
6. Find the *n*th derivative of e^{7x+7}.
7. Evaluate $\int \frac{1}{x^2+4x+3} dx$.
8. Evaluate $\int x \sin x \, dx$.
9. Form a differential equation by eliminating the arbitrary constant a from

   $y = 4(x+a)$

10. Solve $(x+3)\frac{dy}{dx} = y+5$.

PART – B

(5x8=40)

Answer any FIVE of the following questions

11. Show that the system of equations $x+y+z=3$, $x+2y+3z=4$, $x+4y+9z=6$ are consistent and solve them.

12. Find the eigen values and eigen vectors of the matrix $\begin{pmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{pmatrix}$.

13. Solve the equation $8x^3 - 14x^2 + 7x - 1 = 0$ given that the roots are in geometric progression.

14. Solve the equation $2x^3 - 7x^2 + 4x + 3 = 0$ given that $1 + \sqrt{2}$ is a root of the equation.

15. (i) If $y = a\cos 5x + b\sin 5x$, Find $\frac{d^2y}{dx^2} + 25y$

(ii) If $y = \sin^{-1} x$, Find $\frac{d^2y}{dx^2}$.

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

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

18. Solve $\frac{dy}{dx} + xy = x$.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. (a) Verify Cayley Hamilton theorem and hence find the inverse of the

matrix $\begin{pmatrix} 1 & 2 & 3 \\ 0 & -1 & 2 \\ 1 & 0 & 2 \end{pmatrix}$.

(b) Find the rank of the matrix $\begin{pmatrix} 1 & 1 & -3 & -1 \\ 4 & -2 & 6 & 8 \\ 15 & -3 & 9 & 21 \end{pmatrix}$.

(15+5)

20. (a) Solve the equation $6x^4 + 5x^3 - 38x^2 + 5x + 6 = 0$.

(b) If y = $\sin^{-1}$x Prove that $(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - n^2y_n = 0$.

(10+10)

21. (a) Evaluate $\int \frac{dx}{1+\sin x + \cos x}$

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

(10+10)

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

ALLIED MATHEMATICS II (084CS2A01)

SEMESTER II

Time: 3 Hours

Max. Marks: 100

29 / AN

PART – A

Answer ALL questions (10x2=20)

1. If $U=\{1,2,3,...,10\}$, $A=\{1,2,5,7\}$ and $B=\{3,7,9,10\}$. Find $\overline{A\cap B}$.
2. Construct the truth table for $(\sim P)\vee(\sim Q)$.
3. Define permutation.
4. Write the recurrence realation for Fibonacci sequence.
5. Define semi group monomorphism
6. If $A=\{2,7,14,28,56\}$ and $a\le b$ if and only if a divides b, Draw the Hasse diagram for the poset $(A,\le)$.
7. Define complete graph and give an example.
8. Define discrete graph D_n and draw D_5.
9. What is meant by tree searching?
10. Draw the positional tree for the expression $a + b$.

PART – B

Answer any FIVE of the following questions (5x8=40)

11. If $A=\{a,b,c,d,e,f\}$, $B=\{b,c,g\}$ and $C=\{a,c,e\}$,

    Find (i) $A\cup B\cup C$

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

    (iii) $A-B$

    (iv) $B\oplus C$

12. Prove by mathematical induction that $1+2+2^2+...+2^n=2^{n+1}-1$.

13. In how many can 10 people arrange themselves

    (i) In a row of 10 chairs?

    (ii) In a row of 7 chairs?

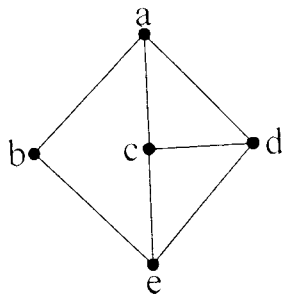
    (iii) In a row of 20 chairs?

    (iv) In a row of 8 chairs?

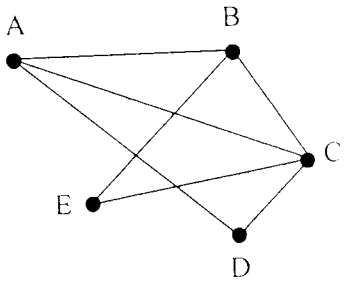
14. Solve the recurrence relation $a_r-7a_{r-1}+10a_{r-2}=0$ given that $a_0=0, a_1=3$.

15. If $A=\{a,b,c\}$, Write the power set $\rho(A)$ of A and draw the Hasse diagram for $(\rho(A),\subseteq)$.

16. Find the adjacency matrix of the following graph.



17. Write Fluery's algorithm and construct an Eulerian trial for the following graph using Fluery's algorithm



18. Construct the binary tree representation for the expression (7+(6-2))(x-(y-4)).

PART – C

Answer any TWO of the following questions (2x20=40)

19. (a) If $A=\begin{pmatrix}1&1&0\\0&1&1\\1&1&0\\0&1&0\end{pmatrix}$ and $B=\begin{pmatrix}0&1&0&1\\1&0&0&1\\1&1&1&0\end{pmatrix}$, Compute $A \odot B$ and show that

$(A \odot B) \odot C = A \odot (B \odot C)$.

(b) Obtain the CNF and DNF for $(P \rightarrow (Q \wedge R)) \wedge (\sim P \rightarrow (\sim Q \wedge \sim R))$ (10 +10)

20. (a) Solve $a_r - 10a_{r-1} + 16a_{r-2} = (r^2 + 3r + 7)3^r$.

(b) State and prove the fundamental theorem of semigroup homomorphism. (10 +10)

21. (a) Define the following and give an example of each.

- (i) Directed graph.

(ii) Isomorphic Graphs

(iii) Linear Graph

(b) Write the preorder, postorder and inorder search algorithms, convert the completely parenthesized algebraic expression $(a-b)\times(c+(d\div e))$ into a tree and find its preorder, postorder and inorder search. (10 + 10)

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

COMPUTER INTEGRATED STATISTICAL METHODS AND OPTIMIZATION TECHNIQUES – I (084CS3A01)

SEMESTER III

Time: 3 Hours

Max. Marks: 100

22 / AN

PART – A

Answer ALL questions (10x2=20)

1. List the different types of diagram available to represent data.
2. What is frequency polygon?
3. List the four properties of average.
4. Write the formula for coefficient of range.
5. What are the different types of correlation?
6. What is called Regression?
7. What do you mean by Interpolation?
8. What is the special feature in Lagrange's method?
9. Write the formula for Simpson's 3/8 rule.
10. Write the formula for Trapezoidal rule.

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Draw a Frequency polygon for the following data

Wgts (kg)	45-49	50-54	55-59	60-64	65-69	70-74
Frequency	12	37	69	75	57	20

12. The following table gives the wages of the workers in a certain factory:

Daily wages	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95
No. of workers	21	29	19	39	43	94	73	68	36	45	27	48	21	12	5

Find the number of workers whose wages lie between Rs. 57 and Rs. 77 by using ogive.

13. List the merits and demerits of Arithmetic Mean.
14. Calculate the mean deviation from the following data:

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	8	12	15	20	14	12	6

15. Find Karl Person's coefficient of correlation between the values of X and Y given below.

X	78	89	96	69	59	79	68	51
Y	125	137	156	112	107	136	123	108

16. The following table shows the ages (X) and blood pressure (Y) of 8 persons:

X	52	63	45	36	72	65	47	25
Y	62	53	51	25	79	43	60	33

Obtain the regression equation of Y on X and find the expected blood pressure of a person who is 49 years old.

17. Given the following pairs of corresponding values of X and Y. Estimate the value of Y for X = 22 by using Newton's forward difference formula.

X	20	25	30	35	40
Y	73	198	573	1198	1450

18. If y(75) = 246, y(80) = 202, y(85) = 118, y(90) = 40, find y(79) using Newton's forward interpolation method.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. i) Calculate the mean & median for the following frequency distribution.

.

Marks	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40 -45	45-50
No. of Students	7	15	24	31	42	30	26	15	10

ii) Calculate the mode from the following data:

Size	15	25	35	45	55	65	75	85
Frequencies	5	9	13	21	20	15	8	3

20. i) Calculate the rank coefficient of correlation of the following data

X	80	78	75	75	68	67	60	59
Y	12	13	14	14	14	16	15	17

ii) A panel of judges A & B graded seven debators and independently awarded the following marks:

Debators	1	2	3	4	5	6	7
Marks by A	40	34	28	30	44	38	31
Marks by B	32	39	26	30	38	34	28

An eighth debator was awarded 36 marks by judge A while judge B was not present.

21. Evaluate $\int_0^{10} dx/(1+x^2)$ by using
    (i) Trapezoidal rule
    (ii) Simpson one third rule.

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B.C.A

DATA STRUCTURES AND ALGORITHMS [084CS3M01]

SEMESTER III

Time: 3 Hours
9 / FN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

1. What are asymptotic notations?
2. How can you measure the efficiency of an algorithm?
3. List the applications of stack data structure.
4. What is queue?
5. Give the structure of a node in doubly linked list.
6. List the basic operations in a singly linked list.
7. What is a binary tree?
8. What do you mean by a subtree?
9. What is merge sort?
10. What is linear search?

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Discuss the different methodologies of programming.
12. Explain divide and conquer technique with example.
13. Write an algorithm to perform PUSH and POP operations of stack.
14. Explain the operations involved in linear queues.
15. Develop an algorithm for inserting a node in doubly linked list.
16. What are the steps involved in searching a node in singly linked list?
17. How bubble sort works? Explain with an example.
18. What is binary search? Explain with an example.

PART – C

Answer any TWO of the following questions (2x20=40)

19. a) Explain Greedy method with an example.

    b) Write note on abstract data types.

20. Discuss in detail about the binary tree traversal techniques with suitable examples.
21. What is quick sort? Explain quick sort algorithm with an example.

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B.C.A

MICROPROCESSOR (084CS3M02)

SEMESTER III

Time: 3 Hours

Max. Marks: 100

26 / AN

PART – A

Answer ALL questions (10x2=20)

1. Define the term of Microprocessor.
2. How does assembly language get translated into machine language?
3. Give syntax of Conditional Branch Instruction.
4. List out Logic Operations.
5. What is an index?
6. Write down any two 16 bit Data transfer instruction.
7. Define the term of Counter.
8. What is meant by Subroutine?
9. Define Maskable Interrupt.
10. What is SIM?

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Explain the Input and Output Devices.
12. Elaborate about Data transfer operations.
13. Discuss on Logic operation rotate.
14. Exemplify Stack Operations.
15. Illustrate about Vectored Interrupts.
16. Explain Time delay register.
17. Explain various addressing modes in detail.
18. Write an Assembly language program to perform 8 bit addition and subtraction.

PART – C

Answer any TWO of the following questions (2x20=40)

19. Draw a neat diagram and explain the Architecture of 8085 Microprocessor.
20. Explain the 8255A Programmable peripheral interface.
21. Elaborate about Restart, Conditional Call and Return.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

B.C.A DEGREE END OF SEMESTER EXAMINATIONS – MAY 2019

B.C.A

SYSTEM MANAGEMENT –I (084CS3A02)

SEMESTER III

Time: 3 Hours **Max. Marks: 100**

9/ AN

PART – A (10x2=20)

Answer ALL questions

1. Define System design?
2. What is Structured Analysis?
3. Define decision tree.
4. What is Interview?
5. What is a Data Dictionary?
6. What is Data description?
7. Define Capacity.
8. What is meant by Ergonomic Design?
9. Define sequence codes.
10. What is an entity?

PART – B (5x8=40)

Answer any FIVE of the following questions

11. What are the tools for system development? Explain.
12. Explain any two categories of information system.
13. Explain the different types of testing Project Feasibility.
14. What are the major activities in requirements determination? Explain.
15. Explain the tools of data flow strategy.
16. Write short notes on Describing data elements.
17. What are the features to be designed in analysis to design transition?
18. Explain the data structure diagram.

PART – C (2x20=40)

Answer any TWO of the following questions

19. Explain the system development life cycle?
20. Explain any two of the tools for documenting procedures and decisions.
21. What is input validation? Explain the methods available.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

MULTIMEDIA SYSTEMS (084UC3I03)

SEMESTER III

Time: 3 Hours
2 /FN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

1. Define Multimedia.
2. What is meant by Sampling Size?
3. What are Digital signal?
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 screen videos?

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Define the multiple facets of multimedia in detail.
12. Explain about the Multimedia software.
13. Discuss about the digital audio editing techniques.
14. Write about the Text in Multimedia.
15. Describe in detail about the MIDI fundamentals.
16. Discuss about the Digital photographic techniques.
17. Describe about the Digital video fundamentals.
18. Explain about the video capture techniques in multimedia.

PART – C

Answer any TWO of the following questions (2x20=40)

19. Discuss about the various classification of Multimedia and the Multimedia Hardware in detail.
20. Explain in detail about basic concepts of color displays.
21. Explain in detail about the 2D and 3D animation techniques in detail.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

ALLIED COMPUTER SCIENCE II (144PY4A02)

SEMESTER IV

Time: 3 Hours **Max. Marks: 100**

29 /FN

PART – A

Answer ALL questions **(10x2=20)**

1. What is internet?
2. Define Modem.
3. What is anchor tag?
4. What is web page?
5. What is nested list?
6. Define VALIGN?
7. What is Cell Padding?
8. Write the syntax to add image in html.
9. What is the use of <img> tag?
10. Define applet.

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. What is Internet? Explain the advantage of Internet
12. Discuss the usage of Modem.
13. Explain hyperlink with example.
14. Explain formatting tags with examples.
15. What are the attributes that can be included in table tag?
16. What are the applet displaying methods? Explain.
17. Write an html program to display the content in CENTER and place the picture in LEFT alignment.
18. Explain the text styles available in html.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Explain the types of list in HTML.
20. Create a table in html to display the fees structure of your college for various departments.
21. Explain the Applet Architecture with diagram.

MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)

B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

SYSTEM MANAGEMENT -II (134CS4A03)

SEMESTER IV

Time: 3 Hours **Max. Marks: 100**

29 / FN

PART – A

Answer ALL questions **(10x2=20)**

1. Define E-Business.
2. What is intranet?
3. Define Bluetooth.
4. What is repeater?
5. What is B2B?
6. Define EDI.
7. What is Virus?
8. Define Spyware.
9. What is E-money?
10. What is EFT?

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. How does the driver support E-commerce growth? Explain.
12. Explain the Critical success factors for M-Commerce.
13. Write short notes on implication for Management.
14. Compare and contrast B2B and B2C E-commerce.
15. Write short notes on intermediary-oriented B2B.
16. Explain the role of biometrics Security.
17. What is the general Guidance to E-Payment? Explain.
18. Explain the usage of Application of Smart Cards.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Explain the benefits and limitations of the Internet.
20. What are the steps involved for the security protection and recovery? Explain
21. What is EDI? Explain with B2B Tools.

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B.C.A

SYSTEM MANAGEMENT – II (084CS4A02)

SEMESTER IV

Time: 3 Hours
29 / FN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

GIVE THE MEANING OF:

1. Receipts
2. Assets
3. Liabilities
4. Double Entry
5. CVP Analysis
6. Cash Budget
7. Ratios
8. Creditors
9. Stock
10. Variable Cost

PART – B

Answer any FIVE of the following questions (5x8=40)

11. What are the golden rules of Accounting?
12. What are budgets? Briefly write about two types of Budgets?
13. Write in brief about any two conventions.
14. Write a short note on dual aspect concept.
15. What are the advantages of Marginal Costing?
16. Calculate gross profit ratio from the following:

PARTICULARS	Rs.
Sales	2.00.000
Sales Returns	2.00.000
Opening stock	4,00.000
Purchases	12.00.000
Purchases Returns	3. 00.000
Closing stock	1,30.000

17. Credit Sales for the year-Rs.24,000; Bills Receivables-Rs.2,000; Debtors-Rs.2,000
    Calculate Debtors' Turnover Ratio and Debt collection period.
18. Calculate (i) P/V Ratio (ii) Profit when sales are Rs.20,000.
    Fixed expenses Rs.4,000
    Break-even point Rs.10,000

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Explain the basic accounting concepts in detail.
20. From the following Trial Balance. Prepare Trading, Profit & Loss a/c for the year 2010 March

Particulars	Dr. (Rs.)	Cr. (Rs.)
Opening stock	25000	
Depreciation	14000	
Carriage inwards	1400	
Furniture	16000	
Carriage outwards	1000	
Plant & machinery	400000	
Cash	17800	
Salaries	15000	
Debtors	38000	
Discount	3000	
Bills receivable	34000	
Wages	32000	
Sales returns	28000	
Purchase	172000	
Sales		378000
Commission		4000
Capital		342600
Creditors		35000
Bills payable		10000
Return outwards		27600

21. A productions sells two products X&Y in two cities Madurai and Hyderabad. The following were the budgeted and actual sales or the year 2014.

	Budget				Actual			
	Madurai		Hyderabad		Madurai		Hyderabad	
	Units	Rs. Per unit	Units	Rs. Per unit	Units	Rs. Per unit	Units	Rs. Per unit
Product 'X'	500	180	300	180	600	180	400	180
Product 'Y'	300	430	200	430	200	430	150	430

For the year 2015, the Management has approved the proposal of sales department to increase the price of X to Rs.200 and decrease the price of Y to Rs.400. The sales estimates from the divisional managers were as follows:

Madurai'X' 800 units 'Y' 500 units
Hyderabad'X' 600 units 'Y' 300 units

An intensive advertising campaign proposed by advertising consultants is expected to result in additional sales of 20% of each product in each division over the estimated sales. Prepare the sales budget for the year 2015 and present it together with the budgeted and actual sales for 2014.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

COMPUTER INTEGRATED STATISTICAL METHODS AND OPTIMIZATION TECHNIQUE – II

(084CS4A01)

SEMESTER IV

Time: 3 Hours 29/FN

Max. Marks: 100

PART – A

(10x2=20)

Answer ALL questions

1. What is Operation Research?
2. What is called Feasible Solution?
3. Define Slack variable.
4. In which case unbounded solution arises?
5. When will the transportation problem become unbalanced?
6. Mention any two methods for finding the initial solution of a transportation problem.
7. Write the properties of Assignment Problem.
8. What is called elapsed time?
9. Define a Project?
10. What is the critical Path of a project?

PART – B

(5x8=40)

Answer any FIVE of the following questions

11. List the merits and demerits of Operation research model.
12. An animal feed company must produce 200 kg. of a mixture consisting of ingredients X_1 & X_2. The ingredient X_1 costs Rs3 per kg and X_2 cost Rs5 per kg. Not more than 80 kg. of X_1 can be used and at least 60 kg. of X_2 must be used. Find the minimum cost mixture. (Use graphical method)
13. Solve the following linear programming problem by Simplex method.

$$\text{Max } Z = 4x_1 + 10x_2$$
$$\text{Subject to} = 2x_1 + x_2 \leq 50$$
$$2x_1 + 5x_2 \leq 50$$
$$2x_1 + 3x_2 \leq 90$$
$$x_1, x_2 \geq 0$$

14. Draw the network and find the Critical Path

Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8
Duration(Days)	7	6	14	5	11	7	11	4	18

15. Solve the following transportation problem using Vogel's method in order to minimise total transportation cost.

Origins	D1	D2	D3	Demand
O_1	10	9	8	8
O_2	10	7	10	7
O_3	11	9	7	9
O_4	12	14	10	4
Requirements	10	10	8	28

16. Solve the following Assignment problem

	Salesman			
Counter	A	B	C	D
W	41	72	39	52
X	22	29	49	65
Y	27	39	60	51
Z	45	50	48	52

17. A book binder has one printing press, one binding machine and the manuscripts of a number of different books. The time required to perform the printing and binding operations for each book are shown below. We wish to determine the order in which books should be processed, inorder to minimize the total time required to turn out all the books. Determine the optimum sequence

Book	1	2	3	4	5	6
Printing time (hrs)	30	120	50	20	90	110
Binding time(hrs)	80	100	90	60	30	10

18. Explain the rules of drawing a network diagram.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. A manufacturing company produces two types of product: the super and the regular. Resource requirements for production are given below in the table. There are 1,600 hours of assembly worker hours available per week, 700 hours of paint time and 300 hours of inspection time. Regular customers will demand at least 1,500 units of the regular type and 90 of the super type.

Product type	Profit Contribution	Assembly time (hr)	Paint time (hr.)	Inspection time (hr.)
Regular	50	1.2	0.8	0.2
Super	75	1.6	0.9	0.2

Formulate and solve the given linear problem to determine the product mix on a weekly basis.

20. Solve the following transportation problem whose cost matrix, availability at each plant and requirement at each warehouse are given as follows:

	Warehouses				
	W_1	W_2	W_3	W_4	Availability
P_1	190	300	500	100	70
P_2	700	300	400	600	90
P_3	400	100	600	200	180
Requirement	50	80	70	140	

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

(i) Draw the network and find the project completion time.

(ii) Calculate total float for each of the activities and highlight the critical path.

Activity	1-2	1-3	2-4	2-6	3-4	3-5	4-5	5-6
T_o	1	5	3	1	8	2	5	2
T_m	4	10	3	4	15	4	5	5
T_p	7	17	3	7	26	8	5	8

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

OPERATING SYSTEMS [084CS4M01]

SEMESTER IV

Time: 3 Hours **Max. Marks: 100**

25/ FN

PART – A

Answer ALL questions **(10x2=20)**

1. Write the goals of operating system.
2. What is a system call?
3. What is critical section?
4. What is a consumer process?
5. Give the methods for handling deadlock.
6. What is known as dispatch latency?
7. What is meant by preemptive scheduling?
8. Define the term 'Throughput'.
9. Define Variable partition multiprogramming
10. What do you mean by 'page fault'?

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. Explain about process control block.
12. Write a note on process synchronization with semaphores.
13. What is concurrent programming? Explain.
14. Describe banker's algorithm for deadlock avoidance.
15. What are the various job schedulers? Explain.
16. Write note on distributed computing.
17. Explain about contiguous and non-contiguous storage allocation.
18. Explain segmentation concepts in detail.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. a) Explain process states and process state transitions.

    b) Explain Peterson's algorithm.

20. Explain the features of any three processor scheduling algorithms.
21. a) Explain about storage hierarchy.

    b) Write a detailed note on virtual storage management.

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B.C.A

DATABASE MANAGEMENT SYSTEMS(084CS5M01)

SEMESTER V

Time: 3 Hours **Max. Marks: 100**

22 / AN

PART – A

Answer ALL questions **(10x2=20)**

1. Define DBMS.
2. What is a transaction?
3. Define an entity.
4. What is an attribute?
5. Define primary key.
6. What is a view?
7. What is a nested query?
8. What is the purpose of UNION operator?
9. What is a functional dependency?
10. Define normalization.

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. List the advantages of DBMS?
12. Explain the features of ER model.
13. How do you modify a table structure? Explain with examples.
14. What is relational calculus? Explain in detail
15. Write a note on creating database triggers.
16. List the aggregate operators and explain with examples.
17. What is a constraint? Write about complex integrity constraints in SQL.
18. Define third normal form. Explain with an example.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Describe the structure of DBMS with a diagram.
20. Explain in detail about the Relational Model and list the principles.
21. What is Boyce codd normal form? Explain in detail with an example

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B.C.A

WEB DESIGNING (084UC5L03)

SEMESTER V

Time: 3 Hours
20 / AN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

1. What is a modem?
2. What is resource sharing?
3. Write the syntax for anchor tag.
4. What are links?
5. What are tab settings?
6. How do we insert images in web pages?
7. What are bullets?
8. Expand DHTML.
9. What are attributes?
10. What are nested frames?

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Write a short note on telnet.
12. Write a note on the various Internet browsers.
13. Discuss the tags used in HTML for linking pages with suitable examples.
14. What are the different text styles available in HTML? Discuss.
15. What are the various sections of a HTML program?
16. What are style sheets?
17. Write a HTML code to design your class timetable.
18. Write a note on frames.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Write a detailed note on the various Internet technologies.
20. Write in detail about lists with suitable examples.
21. Design a web page for your college using various tags.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

Visual Basic Net (084CS5M02)

SEMESTER V

Time: 3 Hours **Max. Marks: 100**

20/ AN

PART – A

Answer ALL questions **(10x2=20)**

1. Define VB.Net.
2. List out the goals of the CLR.
3. What is polymorphism?
4. What is an array of array in VB.Net?
5. What is namespace in .NET?
6. Write the syntax of For statement
7. Write a short note on Object.
8. List out any two ways how to create a class.
9. What is the use of combo box?
10. Define vscrollbar.

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. Write briefly about .NET Framework.
12. Explain about Encapsulation.
13. Explain the features of OOPs.
14. How to create a window form application in VB.NET.
15. What are the classes included in the common dialog class.
16. Explain the following terms wit example i) Private ii) Protected iii) Public.
17. Explain the Constructor with example.
18. Explain the special properties of Textbox.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. A) Describe the benefits of VB.NET.(10)
    B) Explain the destructor with example.(10)
20. What is Array? Explain the creation and using of different types of Array.
21. A) Differentiate between Overloading and Overriding in VB.NET with example.(12)
    B) Explain the features of Data grid control.(8)

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B.C.A

PROGRAMMING USING C# (084CS5M04)

SEMESTER V

Time: 3 Hours
8 / AN

Max. Marks: 100

PART – A

(10x2=20)

Answer ALL questions

1. Define Unmanaged Code.
2. Define Sting Literals.
3. List out the Logical operators in C#.
4. What is usage of this keyword?
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

(5x8=40)

Answer any FIVE of the following questions

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

PART – C

(2x20=40)

Answer any TWO of the following questions

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#.

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B.C.A

WEB PROGRAMMING (084UCS6M02)

SEMESTER VI

Time: 3 Hours
22 / FN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

1. Define WWW.
2. What are frames?
3. What is the use of scripting languages?
4. What are functions?
5. What is OOP?
6. Define event bubbling.
7. What is a session object?
8. List any two features of ASP.
9. What are cookies?
10. List any two uses of forms.

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Write a short note on various lists with suitable examples
12. Write a scripting program to find whether a number is prime or not.
13. Discuss the various events in JavaScript.
14. Write a note on any two objects in JavaScript.
15. Explain in brief the request & response object
16. Write a note on the session objects in ASP.
17. Write a function program to find the factorial of a number.
18. Write a note on cookies.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Create a form for a web page registration validating the fields.
20. What are the statements in Java script? Explain with suitable examples.
21. Explain in detail browser objects.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

DATA COMMUNICATION AND NETWORKING (084CS6M05)

SEMESTER VI

Time: 3 Hours
26 /FN

Max. Marks: 100

PART – A

Answer ALL questions (10x2=20)

1. Define the term 'Data Communication'.
2. What is Distributed Processing?
3. What are the two types of signals?
4. Define the term 'Bit Rate'.
5. What is Error Control?
6. What is a switch?
7. Define Gateway.
8. What is a repeater?
9. What is the purpose of Domain Name System?
10. What is HTTP?

PART – B

Answer any FIVE of the following questions (5x8=40)

11. Explain transmission mode in detail.
12. Elaborate the different types of network topologies.
13. Explain guided media in detail.
14. Discuss sliding window protocol in detail.
15. Explain the structure of the circuit switching.
16. Explain routers in computer networks.
17. Write a short note on www.
18. Describe file transfer protocol in detail.

PART – C

Answer any TWO of the following questions (2x20=40)

19. A. Explain the categories of networks.
    B. What is Domain Name System (DNS)? Explain.
20. What is multiplexing? Explain its types
21. Describe the routing algorithms with example.

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B.C.A DEGREE END OF SEMESTER EXAMINATIONS – APRIL 2019

B.C.A

JAVA PROGRAMMING (084CS6M03)

SEMESTER VI

Time: 3 Hours **Max. Marks: 100**

24/FN

PART – A

Answer ALL questions **(10x2=20)**

1. What are Java Servlets?
2. What is typecasting in Java?
3. What is a conditional operator?
4. What is the purpose of break statement?
5. What is recursion?
6. What are static variables?
7. What do you mean by inheritance?
8. What is multithreading?
9. What is the purpose of throw statement?
10. What is an applet?

PART – B

Answer any FIVE of the following questions **(5x8=40)**

11. Write about the object oriented programming concepts in Java.
12. Explain the following a) Bitwise operators b) Relational operators with examples.
13. Explain method overloading with an example.
14. What are the various string operations? Explain with an example
15. Explain how a thread can be created with an example.
16. What are interfaces? Explain with an example
17. Write about byte stream classes in Java.

PART – C

Answer any TWO of the following questions **(2x20=40)**

19. Explain with suitable examples about the control statements in Java.
20. What is Method overloading? Explain in detail with suitable examples.
21. Write a detailed note on event handling in Java with examples.