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BCA SEM II

Question Papers

Roll No:

Total number of pages: 03

Total No. of Questions: 05

B.C.A Semester End Examination
Cost Accounting BCA 103
Semester II

Maximum Marks: 50

Duration: 2 Hrs.
Instructions 1) All questions are compulsory
2) Figures to the right indicate maximum marks allotted.
3) Provide sufficient margin space in the answer-book for recording marks.
4) Enter the appropriate main & sub-question numbers in the answer-book.
5) Show important working notes as fair work.
6) From Q.No.2 to Q.No5 answer A or X questions

(2*5=10 marks)

Q1A) Answer the following.

1) Define fixed cost.

2) What is works cost?

3) Explain Payroll.

4) What is abnormal loss?

5) Define marginal cost

Q.2.A From the following particulars of M/s Bollywood Ltd , prepare a cost sheet.**(10 Marks)**

|			
Un-productve wages	30,000	Advertisement	20,000
Fuel charges	56,000	Carriage inward	7500
Depreciation on office furniture	50,000	Administration expenses	52,000
Depreciation on plant	95,000	Factory manager salary	1,00,000
Raw Material	3,85,000	Office manager salary	76000
Factory lightning	10,000	Dividend paid	1,80,000
Warehouse charges	56,000	Salesmen's salary	64,000
Productive Wages	1,74,000	Selling overheads	62,000
Office stationery	15,000	General expenses	1,58,000
Distribution expenses	95,000	heating (factory)	30,000

OR

Q.2.X. i Explain the objectives of Cost Accounting.   (5 marks)

ii. Differentiate between Cost Accounting and Financial Accounting.   (5 marks)

1

6415-16BCA207
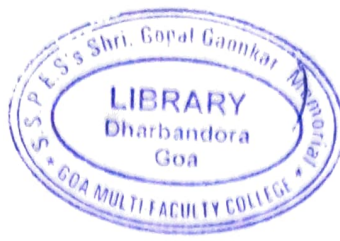
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Roll No:----------------

Total no. of Questions: 1   Total No. of pages: 1

BCA Semester End Examination

Environmental Studies (BCA207)

Semester II

Duration: 1 Hrs.   **Maximum Marks:25**

Instructions:

1. _All Questions are compulsory_
2. _Figures to right indicate marks_
3. _Start each new question on a fresh page_

Q.1) Explain any five of the following in brief (05)

1. Pollution

2. Earthquake

3.HIV

4. Global warming.

5. AIDS

6. Water conservation

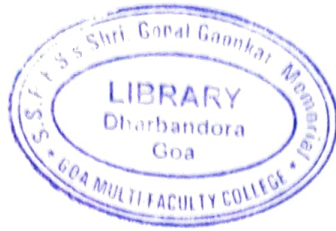Q.2.A) Explain the causes and effects of nuclear hazards. (10)

OR

B) Explain the rain water harvesting methods with examples. (10)

Q.3.A.) Explain environment protection acts.(10)

OR

B.)Explain value education(10)

6415-16BCA204

Roll No:

Total No: of Questions: 5

Total No: of pages: 3

BCA Semester End Examination

Discrete Mathematics

Semester No: II

Duration: 2 Hrs.

Maximum Marks: 50

Instructions: 1) All Questions are Compulsory.

2) Figures to right indicate marks.

3) Start each new question on a fresh page.

4) Non programmable calculators are allowed.

Q.1 A) Answer the following: (5x1=5)

i. $a^0 = $ _____

ii. The symbol for NOT gate is _____

iii. If $X = \{ 1,2,3,4 \}$ and $A = \{ 2,3,4 \}$ then $A' = $ _____

iv. How many different numbers can be form using all the digits of the number 737112?

v. $^5p_5 = $ _____

B) Answer the following: (5x1=5)

i. $^np_0 = $ _____

ii. In the expansion of $(a + b)^n$ the $(r + 1)^{th}$ term is given by _____

iii. $a^m \times a^n = $ _____

iv. Define singleton set.

v. The symbol for AND gate is _____

1

Q.2. Answer the following

A) i. Write down the binomial expansion of $(x^2 - 3y)^5$.

ii. Find n, If a) $4(^nP_4) = ^nP_5$

b) $2(^nP_3) = 36(^nP_2)$

OR

B) i. If $f(x) = x^2 - 6x + 9$, $0 \le x \le 4$, find $f(1)$, $f(2)$, $f(3)$, $f(5)$ if they exist. **(10)**
Also find x if $f(x) = 0$.

ii. Show that $(\sqrt{2}+\sqrt{1})^5 + (\sqrt{2}-\sqrt{1})^5 = 58\sqrt{2}$

Q.3. Answer the following: **(10)**

A) i. Prove that $(p \to q) \lor r \equiv [(p \lor r) \to (q \lor r)]$

ii. $X = \{1, 2, 3, 4, 5, ..., 20\}$
$A = \{1, 3, 5, 7, 8, 9, 11, 12, 13, 15, 19\}$,
$B = \{2, 3, 4, 7, 10, 11, 13, 15, 17, 18\}$.
Verify that a) $(A \cup B)' = A' \cap B'$ and b) $A-B = (A' \cup B)'$

OR

B) i. Convert $(101010)_2$ to decimal form and convert $(728)_{10}$ to octal form. **(10)**

ii. Find $f(g(x))$ and $g(f(x))$ if $f(x) = 3x-1$, $g(x) = x^2+1$

Q.4. Answer the following: **(10)**

A) i. Convert $(10292)_{10}$ to hexadecimal form and convert $(100010)_2$ to decimal form.

ii. Find $p \to (q \lor r) \leftrightarrow \sim [p \to (q \to r)]$ and state its condition.

OR

B) i. Find the 6th term of $\left(\frac{x}{y} - \frac{y}{x}\right)^{10}$ **(10)**

ii. Prove that $(\sqrt{3}+\sqrt{2})^6 + (\sqrt{3}-\sqrt{2})^6 = 970$.

Q.5. Answer the following: **(10)**

A) i. Find a) $(p \land q) \lor [\sim q \leftrightarrow p]$ and   b) $(p \to q) \to [(\sim p \to q) \to q]$

ii. $X = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ is the universal net,
$A = \{1, 2, 3, 4\}$
$B = \{2, 4, 6, 8\}$
Verify that a) $(A \cup B') = A' \cap B'$ b) $(A')' = A$

OR

B) i. A class has 6 girls and 5 boys. If 4 persons out of these are to be selected, find the **(10)**
total number of choices if:
a) there is no restriction on gender,
b) 3 boys and 1 girl is to be selected.

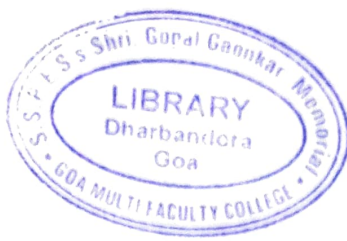ii. If $f(x) = 1+ x - x^2$, find x if $f(x + 1) = f(x + 2)$

6415-16BCA203

Roll No:

Total No: of Questions: 5   **Total No: of pages: 1**

FY.BCA Semester End Examination

Cost Accounting
Semester: II

Duration: 2 Hrs.   Maximum Marks: 50

Instructions: 1) All questions are compulsory
                     2) Figures to the right indicate maximum marks.
                     3) Start each new question in a fresh page.

Q1. Following was the expenditure on a contract for Rs.600000 commenced in January, 2010   (10)

Materials Rs.120000, Wages Rs. 164400, Plant Rs.20000, Business Charges Rs.8600.Cash received on account to 31ˢᵗ Dec 2010 amounted to Rs.240000 being 80 % of the work certified, the value of materials in hand on 31-12-2010 was Rs.10000. Prepare the Contract account for 2010 showing the profit to be credited to the year's profit and loss account. Plant is to be depreciated at 10 %.

Q2. The product of company passes through three distinct processes to completion. They are known as A,B and C. From past experience it is ascertained that the Normal loss incurred in each process is -Process A 2%, Process B 5%, Process C 10%

In each case the percentage of loss is computed on the number of units entering the process concerned. The output of each process passes immediately to the next process and the finished units are passed from process C into stock.   (10)

	Process A	Process B	Process C
Materials consumed	6000	4000	2000
Direct labour	8000	6000	3000
Manufacturing expenses	1000	1000	1500

20000 units have been issued to process A at cost of Rs.10000.
There is no work in progress in any process. Prepare process accounts

Q3. Calculate the earnings of Worker A, B & C under Taylors Differential & Merrik plan

Normal rate per hour Rs.2.50
Standard time per unit 30 seconds
Worker A produces 1500 units, Worker B produces 1200 units & C produces 1000 units.

Q4.a) What is Cost Accounting? What are its objectives? (10=5*2)
    b)Difference between Cost Accounting & Financial Accounting

Q.5 a) What is Time keeping & Time booking? (10=5*2)
    b) Explain the importance of material control
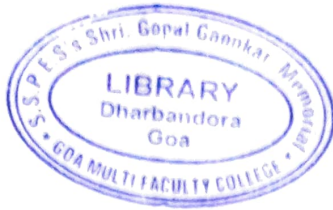
Roll No:_____

Total No: of Questions: 5   Total No: of pages: 2

B.C.A Semester End Examination

Operating System (BCA 202)
Semester II

Duration: 2 Hrs.   Maximum Marks: 50

Instructions: 1. *Figure to the Right Indicates Full marks*
2. *Draw neat diagram wherever necessary with pencil*

Q1.A Select the appropriate option and rewrite the statement   (5*1=5)

i) The processes that are residing in main memory and are ready and waiting to execute are kept on a list called_____

    a) Job Queue b) Ready Queue   c) Execution Queue   d) Process Queue

ii) Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?

    a) First come , First serve Scheduling   b) Shortest Job Scheduling

    c) Priority Scheduling   d) None of the above

iii) Physical memory is broken into fixed size block called _____

    a) Frames   b) Pages c) Backing Store d) None

iv) CPU fetches the instruction from memory according to the value of

    a) Program Counter b) Status Register c) Instruction Register d) Program status word

v) Memory Management provide protection by using two registers, Base Register and Limit Registers

    a) True   b) False

Q1.B Answer the following   (5*1)

i) Define Operating Systems

ii) List types of Fragmentation

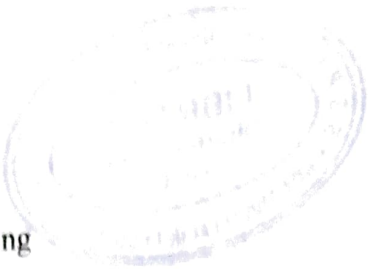iii) Define Deadlock

iv) PCB stands for _____

v) Define Threading

Q2 Answer the following   (10)

A) Define Process management?   (2)

B) Explain process to process switching (3)

X) Explain Paging and Segmentation (5)

OR

Y) Explain Operating System Security and Type of Threats (5)

Q3) Answer the following (10)

A) Difference between Windows and Linux Operating System (2)
B) Explain Features and Function of Operating System (3)

X) Explain Condition for Deadlock (5)

OR

Y) Explain How you avoid deadlock (5)

Q4) Answer the Following (10)

A) Define RAID (2)

B) Explain File System and working of I/O Management (3)

X) Explain Interprocess Communication (5)

OR

Y) Explain Distributed and Web Based Operating system (5)

Q5) Answer the following (10)

A) Define Fragmentation (2)
B) What are the benefits of a distributed File System compared with File System in Centralized System (3)

X) Explain memory management and Swapping (5)

OR

Y) Write Short Note on a) Process Scheduling b) Virtual memory (5)

Roll No: _____

Total No. of Questions: 05

Total No. of pages: 03

BCA Semester End Examination
Data Structures (BCA 201)
### Semester No: II

Duration: 02 Hrs.

Maximum Marks: 50

Instructions: 1. Figures to the right indicate maximum marks.
2. Provide sufficient margin space in the answer-book for recording marks.
3. Enter the appropriate main & sub-question numbers in the answer-book

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Q.1 A) Complete the following statements by using appropriate word(s).　　　　(5x1=5)

1. Binary search is based on _____ approach.

2. _____ binary tree is an incomplete binary tree having nonempty left and right subtree.

3. The _____ of the binary tree is the maximum level of any leaf in the tree.

4. A graph is _____ if one can reach any vertex from any other vertex by following edges in either direction.

5. If degree of a node is zero, then the node is called an _____ node.

Q.1. B) Answer the following.　　　　(5x1=5)

1. Define Big Omega informally.

2. What do you mean by a Spanning Tree?

3. State any one advantage and disadvantage of Linear Search.

4. If there are 11 memory slots, which slot would be occupied by a record with key 230?

5. State the DSF and BSF of the following tree.
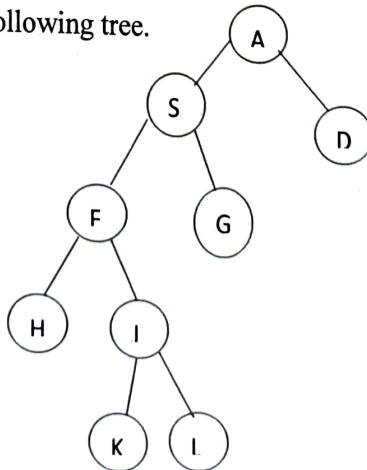
Q.2. Answer the following:
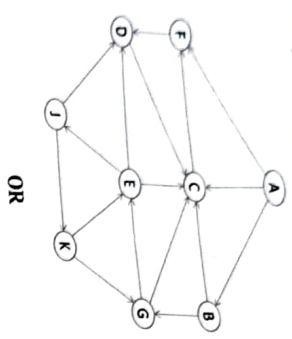
A. Explain the term weighted graph with example.

(02)

P.T.O.

X. Create a Maximum Heap for the following set of numbers.

10 40 20 15 60 45 5 (05)

OR

Y. Sort the given set of numbers using shell sort technique.

22 46 10 3 48 43 20 1 (05)

Q.5. Answer the following:

A. Perform Left and Right Rotation on the following balanced tree. (02)

B. Construct an expression tree using stack with the following data.

$A+(B-C)\$(E*F)$ (03)

X. Explain the procedure of finding a minimum spanning tree using Kruskal's algorithm. (05)

OR

Y. Write a short note on Chained Addressing in hashing with example. (05)

****

B. Compare Queues with Arrays data structure. (05)

X. Write down the Adjacency List for the following graph. (05)

Y. Write a short note on Linked List. (05)

OR

Q.3. Answer the following:

A. What is the Prefix expressions for the following:

$(P+Q*R)\$(D/E/(F*G))$ (02)
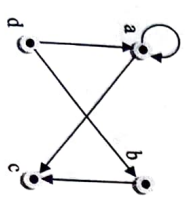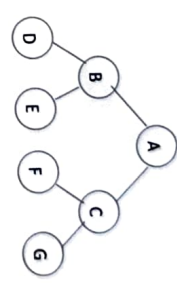
B. State the characteristics of Binary Search Tree. (03)

X. Write a short note on Stack data structures. (05)

OR

Y. Write a short note on Dynamic Memory Allocation. (05)

Q.4. Answer the following:

A. Draw an adjacency matrix Aij for the following directed graph. (02)

B. Define B Tree. (03)

P.T.O.

2.

Roll No:

Total No. of Questions: 05   Total number of pages: 03

B.C.A Semester End Examination
Cost AccountingBCA 103
Semester II

Duration: 2 Hrs.   Maximum Marks: 50

Instructions 1) _All questions are compulsory_
      2) _Figures to the right indicate maximum marks allotted._
      3) _Provide sufficient margin space in the answer-book for recording marks._
      4) _Enter the appropriate main & sub-question numbers in the answer-book._
      5) _Show important working notes as fair work._
6) _From Q.No.2 to Q.No5 answer A or X questions_

Q1A) Answer the following.   (2*5=10 marks)

1) What is Break even Analysis.

2) Define variable cost.

3) What is Idle time?

4) Define prime cost.

5) Explain process costing.

Q.2.A From the following particulars of M/s Euphoria Ltd , prepare a cost sheet. **(10 Marks)**

Gas, oil, fuel	40,000
Motive power	37,000
Depreciation on office furniture	28,000
Depreciation on factory building	85,000
Direct Material	4,65,000
Factory lightning	7,000
Warehouse charges	56,000
Productive Wages	2,74,000
Office stationery	25,000
Distribution expenses	75,000
Selling overheads	56,000
Office salaries	1,78,000
water (factory)	30,000
Carriage inward	8,000
Administration expenses	48,000
Factory manager salary	45,000
Office manager	56000

1

Dividend paid	2,75,000
Salesmen's salary	34,000
Packing charges	16000

Calculate profit if Sales are Rs 18,00,000.

OR

Q.2.X Explain the classification of cost with a suitable chart. (10 marks)

Q.3.A.i. Explain the importance of material management. (5 marks)

ii) Explain in brief the various inventory levels. (5 marks)

OR

Q.3.X. The following details are obtained from Hustle's Pvt. Ltd .You are required to draw out the closing balances in the stores ledger account under FIFO method of inventory valuation.

Dates (February 2018)	Particulars	Value
1	Opening stock 300 kg	10/ kg
6	Received from supplier 400 kg	8 /kg
9	Issued to production department 240 kg	
10	Issued to production department 160 kg	
12	Received from supplier 500 kg	8.5
15	Issued to production department 400 kg	
17	Received from supplier 250 kg	9
20	Received from supplier 600 kg	9.5
25	Issued to production department 350 kg	
26	Issued to production department 260 kg	
28	Issued to production department 340 kg	

Q.4.A Make a comparative analysis of Time Rate system of wage payment with Differential Piece rate method of wage payment. (10 marks)

OR

Q.4.X Explain the various causes of labour turnover and suggest suitable remedies for the same. . (10 marks)

Q.5.A) Builder world undertook a contract to construct a bridge. Contract work commenced on 1st January 2017 and the contract price was ` 50,00,000/- Cash received on account of contract as on 31/12/2017 was ` 1,80,000/- (80% of work certified). Work completed but not certified estimated at ` 1,00,000/-. Plant worth Rs 10,000 and material worth Rs5000 was lost. As on

2

31/12/2017 material at site was estimated at ` 30,000/-. Plant and machinery at site to be depreciated at 5%. Wages outstanding as on 31/12/2015 was ` 15,000/-.

Following are their ledger balances as per the trial balance as on 31/12/2017.

PARTICULARS	AMOUNT
Plant & machinery at cost	3,50,000
Material sent to site	1,20,000
Fuel and power	25,000
Site expenses	45,000
Office expenses	20,000
Wages	65,000

Prepare Contract account.

OR

Q.5.X. The product of a manufacturing concern passes through two processes A & B and then to finished stock. It is ascertained that in each process normally 5% of the total weight is lost and 10% is scrapped which from process A and B realizes at ` 80 per tonne& ` 200 per tonne respectively. The following are the figures relating to both the processes :- (10 Marks)

Particulars	Process A	Process B
Material	26,000	30,000
Wages	8,000	10,000
Manufacturing Expenses	7,000	5,250
Output	830 units	700 units

prepare process cost accounts. Showing cost per tonne of each process. There was no stock or work in progress in any process.

*************** ALL THE BEST***************

3

B.Com Semester End Examination

Mathematical Techniques II

Semester II

Duration: 2Hrs.

Maximum Marks: 80

Instructions:

1. All questions are compulsory. However internal choice has been provided for Q.2 - Q.5
2. Figures to right indicate full marks.
3. Use of non-programmable calculators are allowed.
4. Graph paper will be provided on request.

Q1 Attempt the following.   (4 x 5 = 20)

a) In how much time will Rs.5,000 at 3 % p.a. produce the same income as Rs.10,000 in 2 years at 3% p.a. simple interest?

b) Show that the points (5,4), (2,3), and (1,0) are the vertices of an isosceles triangle.

c) A function f is given as:
$$f(x) = \begin{cases} 3x + 5 & for -3 \le x < -1 \\ 2x + 1 & for -1 \le x < 2 \\ 2 - x & for \ 2 \le x \le 4 \end{cases}$$

Find f(2), f(2), f(3), f(1).

d) Find $\frac{dy}{dx}$ if

   i. $y = x^2 \log x$

   ii. $y = (a^x - 5x + 4)^5$.

e) Find the equation of line having slope 3/4 and Y-intercept -6.

<div align="center">OR</div>

p) In how many years will sum of money be doubled at 25% p.a. simple interest?

q) A(2,1) and B(4,3) are two points. If B is the mid-point of segment AC, find the co-ordinates of the point C.

r) If $f(x) = 2x^2 - 3x + 1$ for what value of x is $f(2x) = 2f(x)$?

s) Differentiate with respect to x

   I. $y = \frac{3x+5}{5x-7}$

   II. $y = \sqrt{3x^2 + 2} + e^x$

t) Find the equation of the line passing through the point of intersection of the lines 2x + y = 3, x -3y = 12 and through the point (2,3).

Total No: of Questions: 05

Total No: of pages: 02

F.Y.B.C.A Semester End Examination

BCA201: DATA STRUCTURES

Semester: II

Duration: 2 Hours.   **Maximum Marks: 50**

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1) All questions are compulsory
2) Figures to the right indicate maximum marks allotted
3) Start each new question on a fresh page
4) Enter the appropriate main and sub-question numbers in the answer book

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Q1.A) Complete the statement by using appropriate words(s):   [5*1]

i.   _____data structure can't store the non-homogeneous data elements.

ii.   The data structure required to check whether an expression contains balanced parenthesis is_____.

iii.   Circular Linked List is a variation of Linked list in which the first element points to the _____

iv.   A character array initialized with double quoted string has last element as ____

v.   In the following code array will have _____ of rows, int a[][2];

Q1.B) Answer the following questions briefly   [5*1]

i.   Define Degree of a tree.

ii.   If the elements "A", "B", "C" and "D" are placed in a stack and are deleted one at a time, what is the order of removal?

iii.   Explain following code   char b[5] ;

iv.   State one limitation of linked list over binary tree.

v.   Write the code to declare 2-dimensional array with all values initialized to zero;

2) Answer the following questions

i. List the applications of stacks and queues. [2]

ii. Explain the different techniques for resolving of collision in hashing. [3]

ii. Illustrate the procedure of finding the minimum cost spanning tree using prim's algorithm using suitable example. [5]

Q3) Answer the following questions

i. Explain Depth First Search traversal of Graph using an example. [2]

ii. What is Data Structure? Explain various types of Data Structure in detail. [3]

iii. Write an algorithm to insert and delete an element from a Circular Queue. [5]

Q4) Answer the following questions

i. Write PreOrder and PostOrder Traversal for following tree [2]
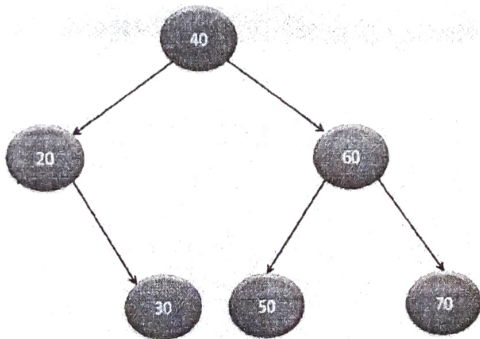
ii. What are limitations of linear search. How we can overcome these limitations. [3]

iii. What is node with respect to Linked list.
   a. Write an algorithm for adding element at start of linked list.
   b. Delete element from end of linked list. [5]

Q5) Answer the following questions

i. Define following terms with respect to Array [2]
   a. Index b.Element

ii. Write an algorithm for selection sort. [3]

iii. Define "Complete binary tree", Also Draw a sample tree and label following
   a. Subtree   b. Parent
   Define Binary search tree. [5]

2

Roll No:

F.Y. BCA Semester End Examination
OPERATING SYSTEMS CONCEPTS (BCA202)
Semester: II

Duration: 2Hrs.

Maximum Marks: 50

Instructions as per subject:
1) All questions are compulsory
2) Figures to the right indicate marks

Q1 A) Complete the statement by using appropriate word(s).   (5x1 = 5)

   a) A _____ is a collection of related information defined by its creator.

   b) A process can be initiated by_____.

   c) _____ is a small code embedded in a program that can make system unusable.

   d) _____ is a light weight process.

   e) _____ module transfers data directly to or from memory without going through the
       processor.

Q.1.B) State whether the following is True or False: (5x1 = 5)

   a) Forking means creating child processes.

   b) Seek time is the time system takes to position the head at the desired track.

   c) All processes in unsafe state are in a deadlock.

   d) RAID Level 1 deals with stripping the data across multiple disks.

   e) Hardware traps to kernel is a way to handle page faults.

Q2) Answer the following questions:

   a) What are the conditions for a deadlock to occur?   2 Marks

   b) State and explain the categories of external devices engaged in I/O.   3 Marks

   c) Elaborate the process of page replacement using any two algorithms with   5 Marks
       suitable examples.

Q3) Answer the following questions

    a) State and explain any two components of a computer system.   2 Marks

    b) Write a note on memory management.   3 Marks

    c) Draw a graph based on the following requests to be served in SSTF disk   5 Marks
       scheduling policy. 98, 183, 37, 122, 14, 124, 65, 67. Consider the disk
       head is initially at cylinder 53.

Q4) Answer the following questions:

    a) Define the following terms: a. Concurrency   b. Deadlock   2 Mark

    b) Name and briefly describe any three classes of intruders.   3 Mark

    c) Write a note on deadlock avoidance and banker's algorithm.   5 Mark

Q5) Answer the following questions:

    a) Briefly explain how files are organized in the following methods: 2 Mark

        a. The Pile   b. The Sequential File

    b) Diagrammatically show the five process states and their interactions.   3 Mark

    c) Write a short note on Network Operating Systems.   5 Mark

******END******

F.Y.B.C.A Semester End Examination

BCA201: DATA STRUCTURES

Semester: II

Duration: 2 Hours.

Maximum Marks: 50

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1) *All questions are compulsory*
2) *Figures to the right indicate maximum marks allotted*
3) *Start each new question on a fresh page*
4) *Enter the appropriate main and sub-question numbers in the answer book*

Q1.A) Complete the statement by using appropriate words(s):   [5 X 1=5]

i.   In Breadth First Search of Graph, _____ data structure is used.

ii.   Representation of data structure in memory is known as_____

iii. ArrayOutOfBoundException occurs when _____ .

iv.   A character array initialized with double quoted string has last element as ____

v.   In the following code array will have _____ of rows, int a[][2];

Q1.B) Answer the following   [5 X 1=5]

i.   Why stack is called a LIFO list?

ii.   Define Collision in hashing.

iii. Define Depth with respect to tree data structure.

iv.   What is time complexity of bubble sort in best case?

v.   Explain following code   int x[8] ;

Q2) Answer the following

i.   What is a circular queue and how is it different from normal queue.   [2]

ii. List the advantages and disadvantages of hashing over other methods.   [3]

iii. Illustrate the procedure of finding the minimum cost spanning tree using kruskal's algorithm using suitable example.   [5]

Q3) Answer the following

i.   Explain adjacency matrix with the help of suitable example   [2]

ii. Describe the different notations used to denote the asymptotic running time of an algorithm.   [3]

iii. Write down the algorithm for insertion of elements in following data structures

   a. Stack

   b. Queues   [5]

Q4) Answer the following

i.   Define following terms with respect to Array   [2]

   a. Index

   b. Element

ii. Write the steps to search an element using Binary search Algorithm   [3]

iii. Explain Linked List Data structure with respect to following points   [5]

   a. Node

   b. Operations performed

   c. Types

   d. Applications

2
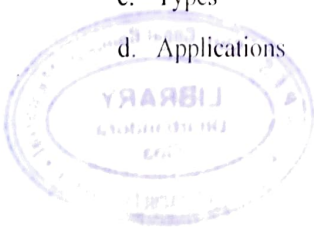
Q5) Answer the following

i.   Write PreOrder and PostOrder Traversal for following tree |2|

```
              18
           /      \
        211         20
           \          \
            12          190
```
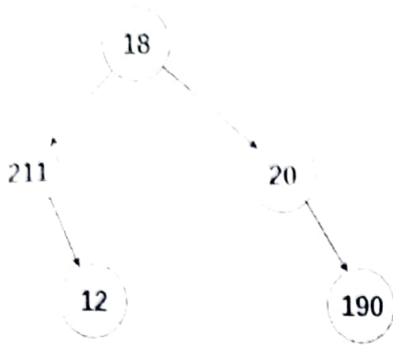
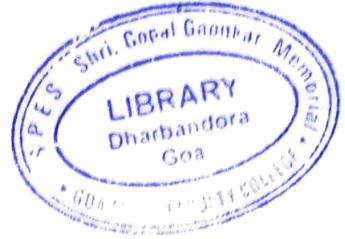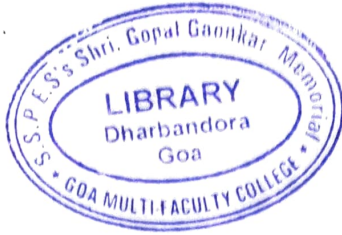ii.   Explain insertion sort algorithm with real life example. |3|

iii.   Define Strictly binary tree with Example, Also Draw a sample tree and label following

     a. Root

     b. Siblings

     c. Leaf

     d. Levels |5|

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Roll No:

Total No: of Questions: 5

Total No: of pages: 3

BCA Semester End Examination

Discrete Mathematics

Semester No : II

Duration: 2 Hrs.

Maximum Marks: 50

Instructions: 1) All Questions are Compulsory.

2) Figures to right indicate marks.

3) Start each new question on a fresh page.

4) Non programmable calculators are allowed.

Q.1A) Answer the following: (5x1=5)

i. $^nC_n =$ _____

ii. The symbol for OR gate is _____

iii. If A = { 1,2,3,4 } B = { 2,4,6,8 } then A ∩ B = _____

iv. The value of $\sqrt{x} =$ _____

v. If f (x) = 3x-5 then f (2) = _____

B) Answer the following: (5x1=5)

i. 0! = _____

ii. How many seating arrangement can be made for 5 students on 2 chairs?

iii. The symbol for AND gate is _____

iv. $a^1 =$ _____

v. Define set.

1

Q.2. Answer the following: (10)

A) Find i. a) $\sim (\sim p \vee \sim q)$

b) $(p \rightarrow q) \leftrightarrow (\sim p \vee q)$

ii. If $A = \{L, O, G, A, R, I, T, H, M\}$

$B = \{T, H, E, O, R, Y\}$

$C = \{T, H, E, O, R, E, M, S\}$

Verify $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

OR

B) i. A club has 5 girls and 7 boys. If 4 persons out of these are to be selected, find the total number of choices if: (10)
a) there is no restriction on gender,
b) 3 boys and 1 girl is to be selected.

ii. If $f(x) = x^2 + 3x - 4$, find x if $f(x + 1) = f(x + 2)$

Q.3. Answer the following: (10)

A) i. Prove that $\sim (p \leftrightarrow q) \equiv (p \wedge \sim q) \vee (\sim p \wedge q)$

ii. $X \equiv \{1, 2, 3, 4, \ldots, 15\}$ is the universal set.
$A \equiv \{1, 3, 5, 8, 9, 10, 12, 15\}$,
$B \equiv \{2, 3, 4, 6, 8, 9, 10, 11, 13\}$.
Verify that a) $(A \cup B)' = A' \cap B'$ and b) $A-B = A \cap B'$

OR

B) i. Find $f(g(x))$ and $g(f(x))$ if $f(x) = x^2$, $g(x) = 5X - 6$. (10)

ii. Convert $(6438)_{10}$ to binary form and convert $(654)_8$ to decimal form.

Q.4. Answer the following: (10)

A) i. Prove that $(\sqrt{2}+1)^5 + (\sqrt{2}-1)^5 = 58\sqrt{2}$.

ii. Convert $(101010)_2$ to decimal form and convert $(6592)_{10}$ to hexadecimal form.

OR

B) i. Find the 4th term of $\left(2 - \dfrac{x}{3}\right)^{10}$ (10)

ii. Construct the truth table for the following, Also state its condition

$(p \wedge q) \vee (\sim p) \vee [p \wedge (\sim q)]$

Q.5. Answer the following: (10)

A) i. Write down the binomial expansion of $(1 - x)^5$.

ii. Find n, If a) $^nP_3 = {}^nP_4$ and b) $2{}^nP_3 = 60\,{}^nP_2$

OR

B) i. If $f(x) = x^2 - 6x + 9$, $0 \le x \le 4$, find $f(1)$, $f(2)$, $f(3)$, $f(0)$ and $f(5)$, if they exist. (10)

ii. Prove that $(\sqrt{5}+1)^5 - (\sqrt{5}-1)^5 = 352$.

BCA Semester End Examination

Fundamentals of Cost Accounting

Semester: II

Duration: 2 Hrs.

Maximum Marks: 80

Instructions   1) All questions are compulsory.

2) Figures to the right indicate maximum marks.

3) Start each new question in a fresh page.

Q1.A) What is Cost accounting? What are the objectives of Cost accounting   (10)

OR

Q1.B) From the following particulars of ABC Ltd prepare cost sheet for the year ended 31-3-2018   (10)

Particulars	Rs.	Particulars	Rs.
Direct Materials	1,00,000	Telephone Charges	125
Consumable stores	2,500	Postage	500
Direct Wages	30,000	Telegrams	250
Manager's Salary	5,000	Storekeeper's wages	1,000
Wages of Foreman	2,500	Salesmen's salary	1,250
Directors' fees	1,250	Oil and water	500
Electric power	500	Travelling expenses	500
Office Stationery	500	Rent: Factory	5,000
Lighting: Factory	1,500	Advertising	1,250
Office	2,500	Sales	1,89,500
Warehouse charges	500	Carriage outward	375
Factory plant	3,500	Transfer to Reserves	1,000
Dividend	2000	Discount on issue of shares	1000
Depreciation: Factory Plant	500	Office Premises	1250

Q2. A) What is Time keeping? What are the requisites of Good time keeping system   (10)

OR

Q.2B) Calculate the earnings of Worker A,B & C under Taylors Differential plan   (10)

Normal rate per hour Rs.2.50

Standard time per unit 30 seconds

Worker A produces 1500 units, Worker B produces 1200 units & C produces 1000 units

Q.3 A) What is inventory control? Explain the various methods of inventory Valuation   (10)

OR

(10)

Q.3B) Two Components A and B are used as follows:

Average consumption 40 units

Normal usage 50 units per week each

Minimum usage 25 units per week each

Maximum usage 75 units per week each

Reorder quantity- A: 300 units, B: 500 units

Re-order period- A:4 to 6 weeks, B: 2 to 4 weeks

Maximum lead time for emergency- A: 1 week, B:2 weeks

Calculate for each component: Reorder level, Maximum level, Minimum level, Average level, Danger level

Q.4.A) What is Contract costing? What are the features of Contract Costing?

OR

Q4.B) Following was the expenditure on a contract for Rs.600000 commenced in January, 2010

(10)

Materials Rs.120000, Wages Rs. 164400, Plant Rs.20000, Business Charges Rs.8600.Cash received on account to 31st Dec 2010 amounted to Rs.240000 being 80 % of the work certified, the value of materials in hand on 31-12-2010 was Rs.10000. Prepare the Contract account for 2010 showing the profit to be credited to the year's profit and loss account. Plant is to be depreciated at 10 %.

Q5.A) Explain the meaning of Standard Costing and Operation Costing   (10)

OR

Q5.B) The product of company passes through three distinct processes to completion. They are known as A, B and C. From past experience it is ascertained that the Normal loss incurred in each process is -Process A 2%, Process B 5%,   (10)

In each case the percentage of loss is computed on the number of units entering the process concerned. The output of each process passes immediately to the next process and the finished

units are passed from process B into stock.

	Process A	Process B
Materials consumed	6000	4000
Direct labour	8000	6000
Manufacturing expenses	1000	1500

20000 units have been issued to process A at cost of Rs.10000.

There is no work in progress in any process. Prepare process accounts