Walmart

BC-201

Discrete Mathematics

BCA 2nd Sem.(2017-20)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. If A = {1, 2, 3} B = {1, 2, 3, 4} C = {1, 2, 3, 5, 6} Ωe = {x : n is a digit} then find the following.
   (a) $(A \cap B) - C$
   (b) $A^c - B$
   (c) $(A \cap B)^c - C$
   (d) $(A \oplus B) \cap C$
2. If A = {1, 2, 3} B = {2, 4, 5) Ω = {x : X is a digit}
   (a) $(A \cup B) \cap (B - A)$
   (b) $(A - B)^c$
   (c) $A^c - B^c$
   (d) $(A \cap B)^c$
3. (i) Define equivalence relation on a set with example :
   (ii) If A= {1,2,3,4} B= {1,3,9,10} C={5,6,7,8} and

P.T.O.

$R = \{(1,1), (1, 3), (2, 9), (2, 10), (3, 3), (4, 10)\}$

$S = \{(1, 5), (3, 7), (9, 7), (10, 8)\}$

them find ROS and its Relation graph

4. List all partitions of sets :
   (a) $A = \{a, b, c\}$
   (b) $A = \{1, 2, 3, 4\}$.
5. If the function $f : R \to R$ be defined by $f(x) = x^2 + 1$ where R is the set of real numbers then find the value of
   (i) $f^1(-5)$
   (ii) $f^1(26)$
   (iii) $f^1(10, 37)$
6. If $x = \{2, 3, 6, 12, 24, 36\}$ R on $x = \{(x, y) \in R$, n divided y$\}$
   (i) Construct Hall C diagram
   (ii) Maximal and Minimal Elements
   (iii) IS poset a Lattice?
7. Given the Boolean function $f = xy + xy^1 + y^12$
   (i) List the truth table for the given function
   (ii) Simplify the function using of K-map
8. Show that set of all divisions of 70 from a Lattice.
9. Minimize the Boolean expression by the function.
   (a) $f(p, q, r, s) = \Sigma(5, 8, 9, 10, 11, 12, 13, 14, 15)$
   (b) $f(p, q, r,s) = \Sigma$ (1,2,3,6,8,9,10,12,13,14)

A·B

BC-202

Computer Architecture

BCA 2nd Sem.(2017-20)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. Explain the construction with the logic diagram of a 4 to 1 line multiplexer.
2. Construct a 5 to 32 line decoder with four 8 to 8 line decoders with enable and one 2 to 4 line decoder.
3. What is the difference between zero-address, one-address and two-address construction.
4. Explain the structure and functioning of arithmetic logic unit (ALU).
5. Explain division algorithm with the help of example.
6. Explain the virtual memory concept of memory management.
7. What are the different types of basic logic gates? Explain with the help of truth table.

P.T.O.

8. What is the error detection code? Explain any two method used for error detection.

9. What is the shift register? Explain the shift micro-operation.

10. Write short notes on any two of the following :

    (a) K-map

    (b) Flip-flop

    (c) DRAM

    (d) Sequential circuit

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 BC-203

C programming & Data Structure

BCA 2nd Sem.(2017-20)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. What is C language? Explain its features and application.
2. (a) What is function? Describe the normal function and recursive function with example.
   (b) What is Actual and Formal parameter?
3. What is "for" loop? Write a C programme to print all prime numbers from 2 to n given numbers.
4. What is structure? Write a C programme to show the concept of structure.
5. Write a C programme to enter N Number and print the number in Sorted Order using printer.
6. What is Queues? Describe the types of Queues with example.
7. (a) Define Binary Tree. Discuss different properties of Binary Tree.

P.T.O.

(b) What is Recursion? Explain with example.

8. What is Double Dimensional Array? Write a "C" programme to enter mxn no in matrix format and also print the sum of Diagonals.
9. Write a "C" programme to print factorial values of a given integer using function.
10. Write short notes on any two of the following :
    (a) Sequential search
    (b) Control structure in "C"
    (c) Array
    (d) Sorting

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BCA 2nd Sem.(2017-20)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. Discuss the concepts and convention of Accounting.
2. What is double entry system? Discuss its advantages and disadvantages.
3. What do you mean by Profit and Loss Account? How is it prepared? What are its advantages?
4. Discuss different types of expenditure with suitable examples.
5. What is Bill of Exchange? Differentiate between Bill of Exchange and Promissory Notes.
6. From the following ledger account balance extracted from the Book of Nirmal, prepare a Trial Balance as on 31.03.2018:

Purchase	Rs. 104000
Debtors	18550
Premises	62000
Sales	149000
Returns outward	8900
Rates and Taxes	780

P.T.O.

Cash at bank	1560
Carriage inwards	650
Salaries	3900
Stock (01.04.2017)	25000
Drawings	7950
Creditors	8300
Return inwards	5360
Furniture	15600
Cash in hand	390
Capital	85000
Factory wages	5830
Carriage outward	260
Rent received	2990
Insurance	2100
Bad debts	260

7. Ram consigned 10 T.V. sets to Shyam @ Rs. 10,000 each. Ram spent Rs. 2000 for loading expenses. Shyam spent Rs.1000 for unloading expenses and Rs. 2000 for godown rent. Shyam sold 8 T.V. sets to customers @ Rs. 15000 each and is entitled to get 10% as commission. Shyam sent Rs. 10,000 to Ram as advance.

   Prepare necessary accounts in the books of Ram.

8. From the following informations, prepare income and expenditure A/c as on 31.12.2017.

Receipts	Rs.	Payments	Rs.
Cash balance	3800	Sports Equipments	10000

Subscriptions : 01.09.17

2016	1000	Salaries	3000
2017	18500	Office Exp.	300
2018	1200	Electricity	500
Interest	500	Tournament Expense	6500
Donations	1000		
Sale of old Newspapers	500	Balance	7200
Entrance Fee	1000		
Total	27500	Total	27500

Additional Information :

(i) In 2016 subscriptions for 2017 was received for Rs. 500.

(ii) Outstanding subscription for 2017 was 300.

(iii) Charge depreciation @ 20% on sports equipments.

(iv) Sports equipment on 1.1.2017 - Rs. 15500

9. Trial Balance of a firm as on 31.03.2018 is given below :

Debit balance	Amount Rs.	Credit Balance	Amount Rs.
Opening stock	25000	Sales	
Furniture	8000	Commission	
Plant and Machinery	150000	Returns outward	
Debtors	30000	Creditors	
Wages	12000	Capital	
Salaries	20000		
Bad debts	1000		

Purchases	120000		
Electricity charge	1200		
Telephone charges	2400		
General expenses	3000		
Postage and Courier	1800		
Returns Inward	900		
Insurance Premium	1500		
Cash in Hand	2500		
Cash at bank	40000		
Total	419300	Total	419300

Adjustments :

(i) Closing stock Rs. 7000

(ii) Outstanding wages Rs. 600 and salaries Rs. 1400

(iii) Plant and Machinery includes machinery purchased on 1st October 2017 for Rs. 10000.

(iv) Depreciation on all Fixed Assets @ 5% p.a.

(v) Insurance premium paid in advance Rs. 200.

Prepare the Trading and P and L Account and B/S as at 31.03.2018.

10. Write short notes on any two of the following :

(a) Ledger

(b) Account sales

(c) Balance sheet

(d) Double entry system

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