

(2016-19)

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BC-201

Dis Math

2017

Time : 3 hours

Full Marks : 80

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

The questions are of equal value.

Answer any five questions.

1. Define the term:
 - (a) Overlapping Set
 - (b) Vector spaces
 - (c) Universal Sets
 - (d) Groups
2. If $A = \{1, 2, 3, 4, 5\}$ $B = \{3, 4, 5, 6, 7\}$
 $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ then find:
 - (a) $(A - B) \cup (B - A)$
 - (b) $A - B'$
 - (c) $A' - B'$
 - (d) $(A \cup B) - (A \cap B)$
3. (a) Define Boolean Algebra.

P.T.O.

(b) Find the complement of the following Boolean expression,

(i) $xy' + x'z$

(ii) $xy(y + y'z) + x'z$

4. If $x = \{2, 3, 6, 12, 24, 36\}$ R on

$$x = \{(x, y) \in R, x \text{ divides } y\}$$

(a) Construct Hasse diagram

(b) Maximal and Minimal elements

(c) IS POSET a lattice?

5. If $f(x) = ax^2 + bx + 2$ $f(1) = 3$ and $f(4) = 42$ then find the value of b.

6. List all the partitions of sets:

(a) $A = \{1, 2, 3\}$

(b) $A = \{a, b, c, d\}$

7. Minimize the Boolean expression given by the function:

(a) $f(p, a, r, s) = \sum(1, 2, 3, 6, 8, 9, 10, 12, 13, 14)$

(b) $f(p, q, r, s) = \sum(5, 11, 13, 15)$

8. Draw a Karnaugh Map 4-variables.

9. (a) Find fog and gof where $f(x) = x^2 + 1$
 $g(x) = x + 2$ are the functions from R to R.

(b) Find $f(4)$, if $f(x) = x^4 - 3x^3 + 6x^2 - 10x + 16$

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

(a) Relation Matrix

(b) Hasse Diagrams

(c) Uniqueness of finite Boolean

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1. What is Half Subtractor ? Explain a Half Subtractor with the help of truth table and logic diagram.
2. Explain Error Detection Codes with the help of example.
3. Define floating point representation with suitable example with advantages over fixed point representation.
4. Design 4 Bits Synchronous Binary Counter.
5. What is the difference between a direct and an indirect address construction.
6. Define Decimal Arithmetic Unit and its function.
7.
 - i. Explain the Serial In Serial Out (SISO) shift register.
 - ii. Explain the functioning of D Flip-flop with the help of diagram and characteristics table.
8. Explain K-map with example.
9. Write short notes on any two of the following :
 - a. Boolean Algebra
 - b. Error Detection Codes.
 - c. Memory Hierarchy
 - d. Flip-Flop.
10. Differentiate between :
 - a. Computer Architecture and Computer Organization.
 - b. DRAM and SRAM
 - c. Sequential circuit and Combinational circuit.

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BC-203

C Prog. & Data struct.

2017

Time : 3 hours

Full Marks : 80

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

The questions are of equal value.

Answer any five questions.

1. What is operator in "C". Discuss the types of operator used on "C" language with example.
2. Distinguish between while loop and do-while loop with example.
3. What is data structure? Discuss the different types of Data structure. Also explain the application of data structure.
4. Write a C programme to print the following series function (0,1,1,2,3,5,8,13,21,.....N).
5. What is stack? Write a "C" programme to implement the Push and POP operation of stack using Array implementation.

P.T.O.

6. What is sorting? Discuss the type of sorting. Write down the Algorithm and program of selection sort.
7. What is string? Write a "C" programme to enter a string. Print how many words are present in the given string.
8. Distinguish between single linked list and doubly linked list with neat Diagram.
9. Write a "C" Programme to multiply two MXN matrices.
10. Write short notes on any two of the following:
 - (a) Tree
 - (b) Binary Search
 - (c) Jump Statements in "C"
 - (d) Parameter Passing Techniques

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BC-204

Bus. A/c.

2017

Time : 3 hours

Full Marks : 80

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

The questions are of equal value.

Answer any five questions.

1. Explain the different categories in which the accounting transaction can be classified. Also state the rule of 'debit' and 'credit' in this connection.
2. What do you mean by Ledger? Distinguish between Ledger and Journal.
3. What is Final Account? Distinguish between Trial Balance and Final Account
4. Explain various types of Expenditure and Receipts in accordance with Capital V/s Revenue with examples.
5. Define 'Bills of Exchange'. What are its features? Distinguish between B/E and Cheque.
6. Prepare a double column cash book as on 31.03.2018 from the following information:

P.T.O.

		Rs.
01.03.	Cash in hand - -	60,000
03.03	Cash at Bank - -	1,40,000
05.03	Received cash from Mohan Rs. 2,400 and cheque Rs. 7000 and the cheque sent to Bank same day	
08.03	Salary paid by cheque -	31,200
11.03	Received a cheque from Sohan for sale of goods	2,000
16.03	Paid to Shyam cash Rs. 1400 and cheque	720
20.03	Cash deposited into Central Bank of India-	10,000
22.03	Shakshi a customer directly deposited into the C.B.I.	4,000
25.03	Cash withdrew from C.B.I. for office use	4,000
28.03	Bank charges charged by Bank	1,000
30.03	T.V. purchased for cash for Business house-	20,000
31.03	Goods Sold for cash	30,000
7.	'A' drew two bills on 'B' of Rs.40,000 and Rs. 30,000 respectively on 01.05.2017 for three months each. On 04.05.2017 'A' endorses first bill of Rs. 40,000 to 'C' and the second bill of Rs.30,000 discounted with bank @ 6% p.a. on 01.06.2017. On the due date both the bills were dishonoured and the noting charge of Rs. 200 and 400 were charged. Give Journal entries in the books of 'A'.	

8. From the following information of Z Ltd. prepare 'Trial Balance as on 31st March 2018.

	Rs.		Rs.
Opening stock- (01.01.2017)	50,000	Rent Taxes-	3,000
Purchase adjusted	1,60,000	Sundry Expenses	6,000
Debtors	1,00,00	Insurance	3,000
Creditors	60,000	Furniture	22,000
Sales	3,20,000	General Charges	2,000
Return inward	2,000	Discount(cr)	3,000
Wages	40,000	Stock(31.12.17)	40,000
Salaries	50,000	Cost in hand	4000
Capital	1,20,000	Cash at Bank	1,000

9. From the following balances, prepare the Trading and F/L Account and B/S as at 31st March,2018.

Debit Balances	Rs.	Credit Balances-	Rs.
Drawing-	3,150	Capital -	75,000
Cash at Bank-	6,935	Discount-	1,490
B/R-	930	Loans-	7,500
Land & Building-	21,290	Purchase Returns-	725
Furniture-	2,565	Sales-	1,40,750
Discount-	1,980	Reserve for bad debts-	2,325
Bank Charges-	50	Creditors-	9,335
BC-204		3	P.T.O.

Salaries-	3,210	
Purchases-	99,540	
Stock (opening)	30,110	
Sales Return-	935	
Carriage-	2,585	
Rent & Taxes-	3,840	
General Expenses-	1,815	
Plant & Machinery-	15,820	
Book Debts-	41,370	
Bad Debts-	625	
Insurance-	375	
	<u>2,37,125</u>	<u>2,37,125</u>

Adjustments: (a) Closing stock 35000 (b) Provision for Bad debts 10% (c) Insurance prepaid Rs. 25 (d) Rent outstanding Rs.75 (e) Interest on Loan @ 6% p.a.

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

- (a) Capital Profit
- (b) Subsidiary Books
- (c) Income & Expenditure Account
- (d) Indian Accounting Standards
