

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.-2)
MATHEMATICS-I/MATHEMATICS-DISCRETE

Subject Code : BC-203

M.Code : 10010

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A**1. Write briefly :**

- (a) Let $A = \{1,2,4\}$, $B = \{4,5,6\}$, Find $A \cup B$, $A \cap B$.
- (b) Define Function.
- (c) Define Partitions of sets.
- (d) In how many ways can a six people be seated in a round table?
- (e) Define Truth Table.
- (f) Define Recursion.
- (g) Solve : $S(n) - 4S(n-1) + 4S(n-2) = 0$.
- (h) Define Isomorphism.
- (i) Define complete graph.
- (j) Define Spanning tree.

SECTION-B

2. State and prove De-Morgan's law.
3. Define Min-sets. Let B_1, B_2, B_3 are the subsets of a universal set U . find all Min-sets generated by B_1, B_2 and B_3 . Draw the Venn diagram representing all minsets obtained.
4. Prove : $p \wedge q = q \wedge p$.
5. State and prove Five colour theorem.
6. Solve : $T(k) - 4T(K - 1) + 4T(K - 2) = 0, T(0) = 4, T(1) = 17$.
7. Explain the representation of directed graph and also give example.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.