Roll No. | | | | | | | | | | | | 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⋃B.A∩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.