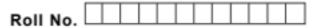


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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(Computer Science & Engineering) (Sem.-3) DISCRETE STRUCTURES Subject Code : BTCS-302 M.Code : 56592

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

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Answer briefly :

- Define Partial order relations.
- Define Hashing Functions.
- Define Sub-Ring.
- Define Euclidean Domain.
- 5. In how many ways can an 8 people be seated in a round table?
- 6. Define Semi-Group.
- Define Monoids.
- Define Dihedral Groups.
- 9. Define un-directed graph.
- 10. Define Chromatic number.

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SECTION-B

- Let R be the relation on the set {0,1,2,3} containing the ordered pairs (0,1), (1,1), (1,2), (2,0), (2,2), and (3,0). What is the reflexive closure, symmetric closure and transitive closure of R?
- 12. Find the field of quotients of the integral domain $Z(\sqrt{2})$.
- 13. Solve: T(k) 8T(K-1) + 16T(K-2) = 0.
- Let G be a finite group and let a ∈ G be an element of order n. Then show that a^m = e if n is a divisor of m.
- 15. State and prove Euler Formula.

SECTION-C

- 16. Prove that any finite semi-group is a group iff both the cancellation laws hold.
- 17. If I and J be any two ideals of a ring R, then prove that IJ is an ideal of R. Moreover $IJ \subseteq I \cap J$.
- 18. A finite connected graph is Eulerian iff each vertex has even degree.

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.

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