OMEGA PG COLLEGE –MBA & MCA(CC:2144& 2174)
APPROVED BY AICTE, AFFILIATED TO OSMANIA UNIVERSITY,HYDERABAD
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Paper Code – PCC 104 Course: Dscrete Mathematics

IMPORTANT QUESTIONS

SHORT QUESTIONS

1. Explain the Operations on Set Theory and Operation on Relation?
2. Write about the Well-Ordering Principle. Prove that the sum of first n integers is n(n+1)÷2 forAll n?
3. Write about Basic Counting Techniques with one example?
4. Explain about The Inclusion – Exclusion Principle?
5. Construct the truth tables of the following Compound Propositions: (i). (p ∨ q) A r(ii). p∨(q A r)
6. What is Propositional logic? Explain about Syntax , Semantics , Validity and Satisfiability?
7. Discuss about Congruence Relation and Quotient Structures?
8. Prove that every permutation of a finite set can be expressed as a cycle or as a product ofdisjoint cycles?
9 . What is Graph ? Explain about the properties of Graph?
10. Write about The Calculation of Shortest Distance path?

ESSAY QUESTIONS:

1. Explain Cartesian Products of Sets and various types of Functions?
2. Explain about Principle of Mathematical Inductions and Schroeder – Bernstein Theorem?
3. Explain about the Pigeon-Hole Principle. Find the minimum number of students in a class tobe sure that three of them are born in the same month?
4. Explain about The Permutation and Combination with one example?
5. Prove that , for any Propositions p and q ,the Compound proposition[(¬q) A(p→ q)] → ¬p is a tautology?
6. What is Logical equivalence? Prove that following logical equivalence: (i). [(p∨q) A (p ∨ ¬q)] ∨q ⇔p∨q . (ii). (p→q) [¬p A(r ∨ ¬q)] ⇔¬(q∨p).
7. Define Normal subgroup. (i). Prove that every subgroup of an abelian group is normal
(ii). Prove that a sub group H of group G is normal in G if and only if x H x^{-1} ⊆ H ∀ x ∈ **G .**
8. Define Boolean Algebra . Explain the operation of Boolean Algebra and Representation ofBoolean Function?
9. Write briefly about Isomorphism , Eulerian and Hamiltonian and walks Graphs?

10Write about Bi-Connected Component and Articulation Points?

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