Important informations regarding recruitment of Manager (Technical) and Assistant Manager (Technical)

Method of Selection/Scheme of Examination

A) Post: Manager (Technical)
Selection process shall consist of three parts:

a) Written Test - 50% weightage: Syllabus for written test shall consist of following sections

i. Reading comprehension
ii. Logical and mathematical reasoning
iii. Technical abilities in Computers and IT

b) Presentation on implemented IT project(s) (Projects done by candidate) - 30% weightage
c) Group Discussions - 20% weightage

Written Test shall be MCQ (Multiple Choice Questions) consisting of 50 questions of one mark each. Negative marking for evaluation shall be applied. Each correct answer be given +1 marks and each incorrect answer be given -1/4 marks.

B) Post: Assistant Manager (Technical)
Selection shall be only on the basis of the merit list as per performance in Written Test (consisting of Multiple Choice Questions; each question having only one correct answer). The test shall consist of 100 questions, each carrying 1 marks and shall be divided into three sections as follows:

a) Reading comprehension (20%): 20 Marks
b) Logical and Mathematical Reasoning (20%): 20 Marks
c) Technical Abilities in Computers and IT (60%): 60 Marks

Negative marking for evaluation shall be applied. Each correct answer be given +1 marks and each incorrect answer be given -1/4 marks.

Date and Time of Written Examination

S. No.	Post	Date & Time
1.	Manager (Technical)	9th November, 2013 – 10.30 AM to 11.30 AM
2.	Assistant Manager (Technical)	9th November, 2013 – 10.30 AM to 12.30 PM

Syllabus of written examination for both posts:

Section A: Reading Comprehension

A small English composition and questions based on this.

Section B: Logical and Mathematical reasoning

Mathematical Logic: Propositional Logic; First Order Logic.

Probability: Conditional Probability; Mean, Median, Mode and Standard Deviation; Probability distributions; uniform, normal, exponential, Poisson, Binomial.

Set Theory & Algebra: Sets; Relations; Functions; Groups; Partial Orders; Boolean Algebra.

Combinatorics: Permutations; Combinations; Counting; Summation; generating functions; recurrence relations.

Graph Theory: Connectivity; spanning trees; Cut vertices & edges; covering; matching; independent sets; Colouring; Planarity

Linear Algebra: Matrices, determinants, systems of linear equations, Eigen values & vectors.

Section C: Technical Abilities in CSE and IT

Digital Logic: Binary number system, logic gates, Boolean Expressions, Minimization, K-maps, Quine-Mccluskey Design of Combinational circuits. and sequential circuits.

Computer Organization and Architecture: Von-neumann architecture, Number representation and computer arithmetic (fixed and floating point), ALU and data-path design, registers and micro operations, Control Unit design, Machine instructions, Addressing modes, Memory organization - Cache and main memory, Secondary storage, Cache coherence, I/O interface (Interrupt and DMA mode), Instruction pipelining.

Programming Fundamentals: Programming in C, Data types, enumerated data types, Array, Pointers, Structure, Unions, Identifiers – scope, extent, binding, precedence of operators, control flow, functions, parameter passing, Recursion, file handling, command line arguments.

Fundamentals of object oriented programming – objects, classes, inheritance, polymorphism.

Data Structures and Algorithms: Abstract data types, Arrays, Linked Lists, Sorting, Searching, Stack, Queue, Binary trees, binary search trees, binary heap, Graphs and their representations, symbol table, hashing.

Techniques of algorithm design: Greedy, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths, Hashing, Sorting, Searching. Complexity analysis (best, worst, average cases) of time and space, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

Compilers: Regular expressions, Lexical Analysis, Context free grammar, Parsing, Syntax directed translation, Semantic Analysis, Intermediate code generation, Basics of code optimization.

Operating Systems: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security. Case Study: Windows, Linux

Database Management System: ER models, Relational model (algebra, Calculus) database design - normalization, Integrity Constraints, File structures (sequential, B/B++), indexing, Transactions and concurrency control, SQL, triggers.

Software Engineering: information acquisition, requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project, design, coding, testing, implementation, maintenance.

Computer Networks: ISO/OSI stack, LAN technologies (Ethernet, Token ring), Flow and error control techniques, Routing algorithms, Congestion control, TCP/UDP and sockets, IP(v4), Application layer protocols (icmp, dns, smtp, pop, ftp, http); Basic concepts of hubs, switches, gateways, and routers. Network security – basic concepts of public key and private key cryptography, digital signature, firewalls.

Web technologies: HTML, XML, basic concepts of client-server computing.