



HARYANA PUBLIC SERVICE COMMISSION

BAYS NO 1-10, BLOCK-B, SECTOR - 4, PANCHKULA

ANNOUNCEMENT

It is hereby announced for the information of candidates who have applied for the posts of System Analyst/ Senior Programmer (Advt. No. 16/2026) & Jr. System Analyst/ Programmer in HSIIDC (Advt. No. 17/2026) that the Commission has decided to conduct Subject Knowledge Test for the above said posts. The pattern of exam is as under:

Scheme / Pattern of Exam:-

1. Subject Knowledge Test

- a) Time duration of exam: 03 hours.
- b) Syllabus is enclosed.
- c) The Medium of Exam will be English language.
- d) Total Marks: 150
- e) Paper will be subjective type.
- f) No candidate will be called for the interview /viva-voce test unless he/she secures a minimum of 35% marks in the test.
- g) The number of the candidates called for interview will be three times, including bracketed candidates if any, of the number of advertised posts provided that they have secured the minimum cut-off marks of 35%
- h) The weightage of the Subject Knowledge Test will be 87.5 percent.

2. **Interview** - The weightage of the interview will be 12.5%

3. The final merit list will be prepared by adding the marks of Subject Knowledge Test and interview

4. The attendance of the candidate in all the stages of the recruitment process is mandatory

5. The syllabus for the Subject Knowledge Test is enclosed

Dated:- 24.08.2026


Deputy Secretary
Haryana Public Service Commission
Panchkula

Syllabus for Subject Knowledge Test for the posts of System Analyst/ Senior Programmer (Advt. No. 16/2026) & Jr. System Analyst/ Programmer in HSIIDC (Advt. No. 17/2026)

Section 1: Engineering Mathematics

Discrete Mathematics: Propositional and first order logic. Sets, relations, functions, partial orders and lattices. Monoids, Groups. Graphs: connectivity, matching, colouring. Combinatorics: counting, recurrence relations, generating functions

Linear Algebra: Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition.

Calculus: Limits, continuity and differentiability, Maxima and minima, Mean value theorem, Integration.

Probability and Statistics: Random variables, Uniform, normal, exponential, Poisson and binomial distributions. Mean, median, mode and standard deviation. Conditional probability and Bayes theorem

Section 2: Digital Logic

Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point)

Section 3: Computer Organization and Architecture

Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining, pipeline hazards. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Section 4: Programming and Data Structures

Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

Section 5: Algorithms

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph traversals, minimum spanning trees, shortest paths.

Section 6: Theory of Computation

Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.

Section 7: Compiler Design

Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation. Local optimisation, Data flow analyses: constant propagation, liveness analysis, common sub expression elimination.

Section 8: Operating System

System calls, processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU and I/O scheduling. Memory management and virtual memory. File systems.

Section 9: Databases

ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

Section 10: Computer Networks

Concept of layering: OSI and TCP/IP Protocol Stacks; Basics of packet, circuit and virtual circuit- switching; Data link layer: framing, error detection, Medium Access Control, Ethernet bridging; Routing protocols: shortest path, flooding, distance vector and link state routing; Fragmentation and IP addressing, IPv4, CIDR notation, Basics of IP support protocols (ARP, DHCP, ICMP), Network Address Translation (NAT); Transport layer: flow control and congestion control, UDP, TCP, sockets; Application layer protocols: DNS, SMTP, HTTP, FTP, Email.



Dated:- 24.08.2026

**Deputy Secretary
Haryana Public Service Commission
Panchkula**