PGCET: 2025 – 26

Number of MCQ questions for PGCET is 100. Each question carry one mark.

Common Syllabus for PGCET to Computer Stream consisting of

(i) Computer Science & Engineering (CSE), (ii) Information Science & Engineering (ISE), (iii) Artificial Intelligence and Machine Learning (AI), (iv) CSE (Artificial Intelligence and Machine Learning) (CI), (v) CSE(Artificial Intelligence) (CA) and (vi) Artificial Intelligence and Data Science (AD), (vii) CSE (Data Science) (CD),(viii) Computer Engineering (CE),(ix) Computer and Communication Engineering (CM),(x) CSE (IoT Cyber Security with Block chain Technology) (CS).

(1) Engineering Mathematics

(i)Linear Algebra: Matrices and determinants, rank of matrix, systems of linear equations, Eigen values and Eigen vectors.

(ii) Calculus: Limit, Continuity and differentiability, Partial derivatives, test for convergence, Fourier series.

(iii) Vector Calculus: Gradient, divergent and curl, line, surface and volume integrals. Stokes theorem, problems related to Gauss's and Green's theorem.

(iv) Differential Equations: Linear and nonlinear first order ODEs, higher order linear ODEs with constant coefficients, Cauchy's and Euler's equations.

(v) Partial Differential Equations: PDEs, formation of PDEs, solution of PDE by direct integration and separation of variables. Heat and wave equations.

(vi)Transforms: Laplace transforms, Fourier transform and Z – transform.

(vii) Probability and statistics: Mean, median, mode and standard deviation. Random variables, Poisson normal and binomial distributions, correlation and regression analysis.

(viii) Numerical Methods: Solutions of linear and nonlinear algebraic equations, integration of trapezoidal and Simpson's rule, Numerical solutions of ODEs.

(2) C Programming for problem solving

(i)Overview of C: Basic structure of C program, executing a C program, variable and data types, operators and expressions. Managing input and output operations, conditional branching and loops. Example programs. Finding rots of quadratic equation, computation of binomial coefficients, plotting of Pascal's triangle.

(ii)Arrays: Arrays (1D, 2D), character arrays and strings, basic algorithms, searching and sorting algorithms (linear search, bubble sort and selection sort).

(3) Technical English

(i) Introduction Listening Skills and Phonetics: Introduction to phonetics, sounds mispronounced, silent and non-silent letters, Homophones and homonyms, aspiration, pronunciation of "The" words ending with age. Use of articles – indefinite and definite articles.

(ii) Identifying Common Errors in writing and speaking English: Subject verb agreement (concord rules with exercises), common errors in subject verb agreement, noun-pronoun agreement. Adjective, adverb, verb, sequence of tenses, misplaced modifiers, Articles and prepositions, common errors in conjunctions. Gender, singular and plural.

(4) Data Structures and Algorithms

Notion of abstract data types, stack, queue, list, set, string, tree, binary search tree, heap, graph.

Tree and graph traversals, connected components, spanning trees, shortest paths, hashing, sorting, searching. Design techniques (greedy, dynamic programming, divide and conquer). Asymptotic analysis (best, worst, average case) of time and space, upper and lower bounds on the complexity of specific problems, NP-completeness.

(5) Logic Design and Computer Organization
Logic functions, minimizations, design and synthesis of combinational and sequential circuits. Number representation and computer arithmetic (fixed and floating point). Machine instructions and addressing modes, ALU and data path, hand-wired and micro-programmed control, memory interface, I/O interface (interrupt and DMA mode), serial communication interface, instruction pipelining, Cache main and secondary storage.

(6) Formal Languages and Automata Theory
Regular languages and finite automata. Context free languages and push down automata, recursively enumerable sets and turning machines, un-decidability.

(7) System Software
Lexical analysis, parsing, syntax, directed translation, runtime environment, code generation, linking (static and dynamic).

(8) Operating Systems
Classical concepts (concurrency, synchronization, deadlock) processes, threads and inter-process communication, CPU scheduling, memory management, file systems, I/O systems, protection and security.

(9) Databases
Relational model (ER model, relational algebra, tuple calculus), database design (integrity constrains, normal forms). Query languages (SQL), file structures (sequential files, indexing, B+ trees). Transactions and concurrency control.

(10) Computer Networks
ISO/OSI stack, data encoding and transmission, data link control, sliding window protocols, LAN architecture, LAN systems, Ethernet, token ring, routing protocols, packet switching. Network devices – switches, gateways, TCP/UDP, application layer protocols and systems (http, smtp, dns, ftp), network security.

(11) Web Technologies
Three tier web based architectures, JSP,ASP, J2EE, NEET systems, html, XML.

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