

TANCET ME Syllabus

The following are the topics of the syllabus for the various parts. The questions will be set at the corresponding degree level.

Part 1 is Mathematics (Common to all Candidates) (i) Vector calculus (ii) Determinants and Matrices (iii) Analytic function theory (iv) Calculus and ordinary Differential Equations (v) Numerical Methods (vi) Probability and Statistics.

Part 2 - Basic Engg. and Sciences (Common to all Candidates) (i) Fundamental of Applied Mechanics (ii) Fundamentals of Material Science (iii) Basic Civil Engg. (iv) Basic Electrical Engg. (v) Basic Mechanical Engg. (vi) Fundamentals of Computers (vii) Fundamentals of Mathematics (viii) Fundamentals of Physics (ix) Fundamentals of Chemistry.

Part 3 - Civil Engg. & Geo. Informatics (i) Mechanics of Solids and Structural Analysis (ii) Concrete and Steel Structure (iii) Soil Mechanics and Geo Technical Engineering (iv) Fluid Mechanics and Water Resources Engineering (v) Environmental Engineering (vi) Surveying (vii) Transportation Engineering (viii) Remote Sensing (ix) Geographic Information Systems (GIS).

Part 4 - Mechanical, Automobile and Aeronautical Engineering (i) Mechanics and Machine Design (ii) Material Science and Metallurgy (iii) Thermodynamics (iv) Refrigeration and Air Conditioning (v) Production Technology (vi) Automotive Engines (vii) Automotive Transmission (viii) Aerodynamics (ix) Aerospace Propulsion. (x) Strength of Materials.

Part 5 - Electrical, Electronics & Communication, Instrumentation and Avionics (i) Circuit Theory (ii) DC & AC Machines (iii) Control Systems (iv) Communication Systems (v) Power Electronics (vi) Network Analysis (vii) Microprocessors, Computer Applications (viii) Transducers and Instrumentation (ix) Avionics.

Part 6 - Earth Sciences (i) Physical Geology and Geo Morphology (ii) Petrology (iii) Structural Geology (iv) Economic Geology (v) Geo Physics and Engineering Geology (vi) Remote Sensing (vii) Hydro Geology.

Part 7 - Production and Industrial Engineering (i) Casting, metal forming and metal joining processes (ii) Tool Engineering, Machine tool operation, Metrology and inspection (iii) Engineering Materials, Processing of Plastics and Computer Aided Manufacturing (iv) Product Design, Process Planning, Cost Estimate, Design of Jigs and Fixtures and Press Tools (v) Operations Research (vi) Operations Management (vii) Quality Control Reliability and Maintenance.

Part 8 - Computer Science and Engineering (i) Discrete Mathematical Structures, Formal Language and Automata (ii) Microprocessor and Hardware Systems (iii) Computer Organization and Architecture (iv) System Programming including Assemblers, Compilers and Operating Systems (v) Programming Methodology, Data Structures and Algorithms including A1 Algorithm (vi) Database Systems (vii) Computer Networks.

Part 9 - Chemistry, Chemical Engg. & Ceramic Tech. (i) Thermodynamics and Kinetics (ii) Heat and Mass Transfer (iii) Fluid Flow (iv) Chemical Process Industries (v) IR, NMR and Mass Spectrometry (vi) Polymer Chemistry and Polymerisation Processes (vii) Fine Ceramics (viii) Glass & Cement (ix) Refractory Materials (x) Organic reactions (xi) Electro Chemistry.

Part 10 - Textile Technology (i) Textile Fibers - Production and Properties (ii) Spinning (iii) Fabric Production (iv) Textile Physics (v) Chemical Processing of Textile Materials (vi) Process and Quality Control in Textile Materials.

Part 11 - Leather Technology (i) Chemistry of Proteins - Collagen and keratin (ii) Principles of various pre-tanning, tanning and post-tanning finishing operations (iii) Technological aspects of various leather manufacture (iv) Environmental & Management in Leather Industries - Animal and Tannery by-products Utilisation (v) Leather Machinery (vi) Analysis and Testing of Materials used in Leather Processing as well as Leather (vii) Design and Construction of Footwear and Leather Goods.

Part 12 - Architecture (i) Building Materials (ii) Building Construction and Technology (iii) History of Architecture (iv) Principles of Architecture (v) Building Services (vi) Housing (vii) Urban Design and Renewal (viii) Town Planning (ix) Landscape Architecture (x) Climatology.

Part 13 - Physics and Material Science (i) Crystal Physics (ii) Electricity and Magnetism (iii) Optics and Quantum Mechanics (iv) Modern Physics (v) Mechanical and Electronic Properties of Materials (vi) Chemical and Thermal properties of materials (vii) Traditional and advanced ceramics.

Part 14 - Applied Probabilities and Statistics (i) Probability - Introductory ideas (ii) Measures of central tendency and Dispersion (iii) Random variable (one and dimensional) (iv) Standard Probability distributions (v) Sampling and sampling distribution, Estimation (vi) Regression and Correlation analysis (vii) Time series.

Part 15 - Social Sciences (i) Settlement Geography (ii) Economic Geography (iii) Industrial locations (iv) Regional Planning (v) Information Systems (vi) Urban Sociology (vii) Community Development (viii) Social Development and Change (ix) Public Participation (x) Rural Development (xi) Agglomeration Economics (xii) Economic base of settlements (xiii) Development Economics and Planning (xiv) Land Economics and Industrialization Policy.