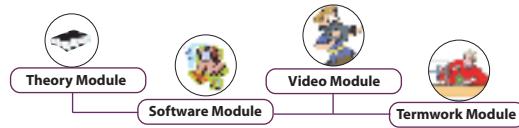


Concrete Technology



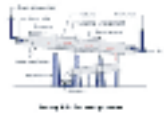
System Requirement:- IBM-PC Compatible with Window-OS, 128 MB RAM/Multimedia Kit

Theory module

Features : Theory, Figures, Photographs, Animations with controller, Highlighter tool, Note creation facility, Systematic page navigation, Printing facility, Access to Videos at appropriate locations.

List of Topics

Ingredients of Concrete



Introduction, Cement, Manufacture of cement, Basic chemistry of cement, Indian standard specifications 269-1976, Chief constituents of cement, Hydration of cement
Classification of cement, **Tests on cement**-Introduction, Classification of aggregates
Physical properties, Mechanical properties, Deleterious substance in aggregates,
Soundness of aggregate, Alkali-aggregate reaction, Sieve analysis, Fineness modulus,
Grading requirements, Standard grading, Use of grading curves, Gap graded aggregate
Tests on aggregates, Recycled aggregate, Introduction, Mixing water, Curing water,
Tests on water.

Concrete

Introduction, Workability, Factors affecting workability, Measurement of workability
Comparison of tests, Segregation, Bleeding, Manufacturing process of concrete,
Strength of concrete, Factors affecting strength of concrete, Microcracking, How
microcracks occurs, Stress strain relation, Other strength of concrete, Relation between
compressive and tensile strength, Resistance to abrasion, Elastic property of concrete,
Creep, Shrinkage, Swelling Questions.

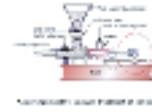


Concrete Mix Design



Introduction, Requirements of concrete mix design, Basic assumptions, Nominal
mixes, Standard mix and design mix, Factors influencing the choice of mix design,
Methods of mix-design, Statistical quality measures Questions.

Special Concretes and Special Concreting Techniques



Introduction, Light weight concrete, Polymer concrete composites, Fibre reinforced
concrete, High density concrete, Self compacting concrete, High performance concrete
Pumping of concrete, Ready-mixed concrete, Vacuum concrete, Cold weather
concreting, Recommended practice and precautions, Hot weather concreting,
Under water concreting, Prepacked concrete, Ferrocement, Roller compacted
concrete Questions.

Admixture and Testing of Concrete

Introduction, Functions of admixture, Classification of admixture, Marsh cone test
Specifications, Analysis of fresh concrete, Compression test, Flexural strength of concrete
Indirect tension test, Test cores, Non destructive testing Questions.



Deterioration and Repairs



Introduction, Permeability of concrete, Durability of concrete, Chemical attack
Carbonation of concrete, Corrosion of reinforcement, Symptoms and diagnosis of
distress, Cracking in concrete structures, Evaluation of cracks, Selection of repair
procedures, Repairs of cracks, Repair by providing addition steel, Repairs by stitching
Repair by jacketing, Shotcrete Questions.