

Concrete Technology (313322)

Most repeated questions — MSBTE K-scheme papers S-2026, W-2025, S-2025, W-2024 (Civil Engineering, Sem III)

How to read: **Asked in** shows the MSBTE papers where the same question came (same idea, any wording).

High = came in 3 or 4 of the 4 papers, **Medium** = 2 papers, **Low** = 1 paper or not asked yet but in the syllabus. Prepare High ones first. Unit marks in the theory paper (K-scheme specification): I – 10, II – 12, III – 24, IV – 12, V – 12.

Top questions (came in all 4 papers)

1. Bogue's compounds — list / chemical formula / role (2 marks)
2. Types of cement and their field applications (rapid hardening, low heat, etc.) (2/4 marks)
3. Fineness modulus of fine aggregate — numerical from sieve analysis (4/6 marks)
4. Concrete mix design — step-by-step procedure as per IS 10262 (6 marks)
5. Water–cement ratio — define / Abrams' law with graph / significance (2/4/6 marks)
6. Mineral (cementitious) admixtures — types / explain any one (2/4 marks)

Unit I — Cement

Question / topic	Marks	Asked in	Probability
Bogue's compounds — list / chemical formula / role	2	S-26, W-25, S-25, W-24 (4/4)	High
Types of cement and their field applications (rapid hardening, low heat, etc.)	2/4	S-26, W-25, S-25, W-24 (4/4)	High
Field tests on cement (any four)	4	S-26, W-25, W-24 (3/4)	High
Initial and final setting time of cement (Vicat apparatus)	4	S-25, W-24 (2/4)	Medium
Physical properties of OPC (list)	2	S-26, W-24 (2/4)	Medium
Compressive strength of cement — laboratory procedure	4	S-26 (1/4)	Low
Define cement; main ingredients (oxide composition)	4	W-25 (1/4)	Low
Fineness, standard consistency, soundness (Le Chatelier), grades 33/43/53	—	not asked yet (in syllabus)	Low

Unit II — Aggregates

Question / topic	Marks	Asked in	Probability
Fineness modulus of fine aggregate — numerical from sieve analysis	4/6	S-26, W-25, S-25, W-24 (4/4)	High
Define fine aggregate and coarse aggregate	2	W-25, W-24 (2/4)	Medium

Requirements of good aggregate	4	W-25, W-24 (2/4)	Medium
Bulking of sand — procedure with sketch, effects	4/6	S-25, W-24 (2/4)	Medium
Aggregate impact value — procedure	4/6	S-26, S-25 (2/4)	Medium
Define fineness modulus	2	S-25 (1/4)	Low
Silt content — effects of excess silt	4	S-25 (1/4)	Low
Bulk density of aggregate (define)	2	S-26 (1/4)	Low
Flakiness index and elongation index (define)	2	S-26 (1/4)	Low
Classification of aggregate by size and shape	4	S-26 (1/4)	Low
Crushing value, abrasion value, water absorption, specific gravity, grading zones	—	not asked yet (in syllabus)	Low

Unit III — Concrete and its testing

Question / topic	Marks	Asked in	Probability
Concrete mix design — step-by-step procedure as per IS 10262	6	S-26, W-25, S-25, W-24 (4/4)	High
Water–cement ratio — define / Abrams' law with graph / significance	2/4/6	S-26, W-25, S-25, W-24 (4/4)	High
Compressive strength of concrete cubes (IS 516) — specimen, testing, results	6	W-25, S-25, W-24 (3/4)	High
Workability — define / factors affecting	2/4	S-26, W-25, W-24 (3/4)	High
Slump cone test with sketch	4/6	W-25, W-24 (2/4)	Medium
Compaction factor test with sketch	4/6	S-26, S-25 (2/4)	Medium
Segregation and bleeding — define, prevention, remedial measures	4/6	W-25, W-24 (2/4)	Medium
Properties of hardened concrete	4	S-26, W-25 (2/4)	Medium
NDT — importance, list of methods, rebound hammer	4/6	S-26, S-25 (2/4)	Medium
Necessity of supervision in concreting	4	S-26, S-25 (2/4)	Medium
Mix design — define, objectives	4	S-26 (1/4)	Low
Impermeability of concrete — define, factors	4	S-25 (1/4)	Low
Creep of concrete (define)	2	S-26 (1/4)	Low
Define concrete / grades of concrete as per IS 456	2	W-24 (1/4)	Low
Recommended slump for different works (IS 456)	6	W-24 (1/4)	Low

Unit IV — Quality control of concrete (concreting operations, formwork, joints)

Question / topic	Marks	Asked in	Probability
Formwork — define, stripping time as per IS 456	4	W-25, S-25, W-24 (3/4)	High
Formwork materials / steel formwork / sketch of beam formwork	2/6	S-26, W-25, S-25 (3/4)	High
Sequence of concreting operations (explain one)	2/4	S-25, W-24 (2/4)	Medium
Precautions during placing of concrete	4	W-25, W-24 (2/4)	Medium
Joints in concrete — types with sketch	4/6	S-26, S-25 (2/4)	Medium
Transportation method for given situations (hilly, high-rise, under water)	6	W-25, W-24 (2/4)	Medium
Types of vibrators / vibrator for given work	2/6	S-25, W-24 (2/4)	Medium
Joint filling materials	2	W-24 (1/4)	Low
Curing — define, methods	6	S-26 (1/4)	Low
Batching (define)	2	W-25 (1/4)	Low
Cold weather concreting — effects	4	S-25 (1/4)	Low

Unit V — Admixtures and special concrete

Question / topic	Marks	Asked in	Probability
Mineral (cementitious) admixtures — types / explain any one	2/4	S-26, W-25, S-25, W-24 (4/4)	High
Admixture — define, types, advantages	2/4	S-26, W-25, W-24 (3/4)	High
Chemical admixtures — retarder function, retarder vs accelerator, AEA vs superplasticizer, trade names	2/4	S-26, S-25 (2/4)	Medium
Ready mixed concrete — explain, advantages, uses	4/6	S-26, W-24 (2/4)	Medium
Self-compacting concrete — define, advantages	4	W-25, W-24 (2/4)	Medium
Lightweight concrete — define / explain	2/4	W-25, W-24 (2/4)	Medium
High performance concrete — properties, applications	4	S-26 (1/4)	Low
Fibre reinforced concrete	—	not asked yet (in syllabus)	Low

Note: Based on MSBTE papers S-2024...S-2026 available on msbte.ac.in (K-scheme papers found: W-2024, S-2025, W-2025, S-2026). Practice guidance only — not a prediction of the exam. This is not an official MSBTE document; study the full syllabus. Prepared by Ananda Technologies — free for students, anandatechnologies.in