K. D. K. College of Engineering,
Department of Civil Engineering
Concrete Technology (III Semester, B. E.)
Viva-Voce

Q1) Define
a) Cement b) Bound water c) Gel water d) Heat of hydration
e) Initial setting time f) Final setting time g) Standard consistency

Q2) State the function of cement in concrete.

Q3)_____ is use to provide colour, hardness & strength to cement
a) Silica b) Alumina c) Iron oxide d) Magnesia

Q4) Tri calcium Aluminate ($3Cao.Al_2O_3$) is also known as _____
a) Alite b) Belite c) Celite d) Felite

Q5) _____ are most important compounds that are responsible for strength.
a) C_3S & C_3A b) C_3S & C_2S c) C_2S & C_3A d) C_3S & C_4AF

Q6) ____ of water by weight of cement is required for chemical reaction with cement.
a) 21% b) 23% c) 24% d) 38%

Q7) Which sieve is used in fineness test of cement?

Q8) What is the role of Gypsum ($CaSO_4$) during the manufacturing of cement?

Q9) Name the cement that will be suitable for freezing weather.

Q10) _____ are the dimension of Le-Chatelier apparatus.
a) 30 mm ϕ, 30 mm Ht., 0.5 mm Th., 165 mm long from center
b) 30 mm ϕ, 25 mm Ht., 0.5 mm Th., 170 mm long from center
c) 25 mm ϕ, 30 mm Ht., 0.4 mm Th., 185 mm long from center
d) 30 mm ϕ, 30 mm Ht., 0.5 mm Th., 160 mm long from center

Q11)_____ water required for preparing paste for Soundness test.
a) 0.78 P b) 0.85 P c) 0.33 P d) 0.65 P

Q12) _____ are the various attachment which are use to determine Standard consistency, Initial setting time & Final setting time respectively.
a) Annular collar, Plunger & Square needle b) Plunger, Annular collar & Square needle
c) Square needle, Annular collar & Plunger d) Plunger, Square needle & Annular collar

Q13) Initial setting time of Low Heat Cement is_____
a) 45min. b) 30min. c) 60min. d) 75min.

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Q14) Final setting time of Rapid Hardening Cement is_____
a) 10hrs. b) >10hrs. c) <10hrs.

Q15) Soundness test detect the presence of_____
a) combined lime & magnesia b) uncombined lime & magnesia
c) uncombined lime & silica d) combined lime & alumina

Q16) Standard pH value for curing & mixing water is _____
a) 5-6. b) 5-7. c) 6-8. d) 8-10

Q17) State the relationship between w/c & strength.

Q18) What is the effect of fineness of cement on overall strength?

Q19) Enlist the properties of good cement.

Q20) Which are the harmful constituents of cement?

Q21) What type of cement is required to be used in the following cases?
a) Dam construction b) Kitchen otta c) Chimney d) Road repairing work e) Marine structure

Q22) State Abrahms w/c ratio law.

Q23) Define
a) Aggregate b) Fine Aggregate c) Coarse Aggregate d) Bulking of sand e) Flakiness Index
f) Elongation Index g) Fineness modulus h) Specific gravity i) Water absorption j) Bulk density

Q24) Enlist the properties of good Aggregate.

Q25) Enlist all sieve sizes used to calculate the Fineness modulus of a fine & coarse Aggregate.

Q26) How the size of aggregate affects the strength of concrete?

Q27) What is the effect of bulking of sand on proportioning of concrete ingredients?

Q28) Differentiate between Impact test & Crushing test of aggregate.

Q29) Name the apparatus which is use to determine Flakiness Index, Elongation Index, Fineness Modulus, Specific gravity & Compressive strength

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Q30) Write the permissible values given by Indian Standard for Flakiness Index, Elongation Index, Fineness Modulus, Specific gravity & Compressive strength

Q31) _____are the dimension of Impact testing machine.

a) 10.2ϕ; 12.5-13 kg Hammer, 39 cm fall, 10ϕ; 5 cm Ht. Mould.
b) 10ϕ; 13.5-14 kg Hammer, 30 cm fall, 10.2ϕ; 5 cm Ht. Mould.
c) 10ϕ; 14.5-15 kg Hammer, 38 cm fall, 10ϕ; 4 cm Ht. Mould.
d) 10ϕ; 13.5-14 kg Hammer, 38 cm fall, 10ϕ; 5 cm Ht. Mould.

Q32) What is Alkali Aggregate reaction?

Q33) What are the impurities in aggregate?

Q34) How the impurities in aggregate affects the strength of concrete?

Q35) What is the use of Specific gravity of cement, F.A., C.A.

Q36) What is grading of an aggregate, How it affect strength of concrete?

Q37) Define

a) Concrete b) Workability c) Segregations d) Bleeding e) Durability f) shrinkage
g) Flexural strength h) Compressive strength i) Creep j) Impermeability k) Harshness
l) Slump m) Compaction factor n) Batching o) Mixing p) Characteristic strength q) Creep

Q38) Enlist the properties of good cement concrete.

Q39) Enlist the various test for determining the flexural strength of concrete.

Q40) How can you determine workability of concrete?

Q41) Draw the sketch of following

a) True slump b) Shear slump c) collapse

Q42) Give the different grade of concrete & their relative proportion as per IS: 456-2000.

Q43) What are the various concreting operations?

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Q44) Match the pair

Type of construction		**Recommended slump in mm.**
Pavement		a) 75 mm.-125 mm.
Mass Concrete		b) 25 mm.-50 mm.
Unreinforced Footing		c) 50 mm.-100 mm.
Cassion & Bridges		d) 30 mm.-125 mm.
RCC Foundation, Wall		e) 25 mm.-75 mm.
RCC slab, beam		f) 25 mm.-50 mm.
Columns		g) 25 mm.-75 mm.

Q45) What are the advantages of concrete over other material of construction like timber construction?

Q46) What is the purpose of testing the hardened concrete?

Q47) State the factors affecting strength of concrete.

Q48) State the factors affecting workability of concrete.

Q49) Why weight batching is preferred?

Q50) Why compaction of concrete is essential?

Q51) What are various methods of compaction of concrete?

Q52) Enlist the various types of vibrators which are used for compaction.

Q53) What is formwork?

Q54) Define curing.

Q55) What is importance of curing?

Q56) Enlist the method of curing.

Q57) State the method of curing for following structural element.
a) Precast element b) Slab c) Wall d) Columns e) RCC Grills

Q58) Enlist stages of quality control of concrete.

Q59) Define Admixture.

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Q60) What is the role of admixture in concrete?

Q61) What are the various type of admixture?

Q62) What is plasticizers & super plasticizers?

Q63) Define
a) Mix Design. b) Design strength c) Variance d) Standard deviation

Q64) Enlist the various factors which affect mix design?

Q65) Enlist the methods of Mix Design.

Q66) How can you calculate value of Himsworth Coefficient?

Q67) Name the IS Code which is use for PCC & RCC

Q68) What is a minimum grade of concrete for any RCC construction as per IS 456-2000.

Q69)_____ water required for preparing paste for Initial Setting Time test.
a) 0.78 P b) 0.85 P c) 0.33 P d) P

Q70)_____ water required for preparing paste for Compressive strength test of cement.
a) (P /4+3) % combined weight of cement & sand b) P /4+3% combined weight of cement & sand
c) w/c ratio = 0.4 b) (P /4+3) % combined weight of cement & sand or w/c ratio = 0.4

Q71) What is pozzolanas & what is the action of pozzolanas in cement?

Q72) Enlist the various Pozzolonic material.

Q73) What is the product of Heat of Hydration?

Q74) How much heat is librated in 28 days during the process of Heat of Hydration?

Q75) Write a relation given by IS 456-2000 for modulus of elasticity & characteristic compressive strength of concrete?

Q76) Write a relation given by IS 456-2000 for flexural strength & characteristic compressive strength of concrete?

Q77) Differentiate between Nominal Mix Concrete & Design Mix Concrete.

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Q78) Enlist the various factors affecting Durability of concrete.

Q79) How can you increase the workability of concrete without increasing the water content?

Q80) How can you check the quality of mixing water?

Q81) Why sufficient cover is must in case of RCC Construction?

Q82) Strength of Concrete is a function of Time & Temperature; justify the statement.

Q83) Why the use of sea water is not recommended in RCC Construction?

Q84) What is the standard size of cube specimen which is use for determining compressive strength of cement?

Q85) What is the standard size of beam and Cylinder specimen which is use for determining flexural and tensile strength of concrete?

Q86) What is the tentative 3, 7 & 28 day's compressive strength of 33, 43 & 53 grade cement.

Q87) What is the tentative 3, 7 & 28 day's compressive strength of M20 grade concrete.

Q88) Tensile strength of concrete up to M25 grade is _____ % of compressive strength of concrete.

Q89) Tensile strength of concrete above M25 grade is _____ % of compressive strength of concrete.

Q90) What is NDT? Enlist some advantages of NDT.

Q91) Enlist the various test for checking workability of Self Compacting Concrete

Q92) As per EFNARC, What is the range for powder content for manufacturing of SCC.

Q93) Write the application/Suitability of following concrete
a) Self Compacting Concrete b) Ferro Cement Concrete c) High Performance Concrete d) Fiber reinforced concrete e) Shortcrete Pumped Concrete

Q94) Define Aspect ratio of Fiber?

Q95) Enlist the various causes of deterioration of concrete

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