FACULTY REFERENCE · CLASS 08 · LOGICAL REASONING (CAPSTONE)

Capstone (BR + Floors + PYQ) · FACULTY REFERENCE

Internal use only | Lecture script | Capstone playbook | PYQ anchors

PURPOSE

Faculty preparation document for Lecture 05 — the Capstone. This class synthesises every analytical-reasoning toolkit from Classes 04-07 (linear, double-row, circular, square, mixed-facing, profession/colour/day combos) AND introduces two fresh layers: blood-relations and floor arrangements. The lecture deck carries no answers or rider questions on screen. This sheet is the prep + safety-net so the faculty walks into the 90-minute capstone with the full final arrangement and method anchor for every one of the 12 examples — including 3 CLAT-PYQ-style sets (2022 · 2023 · 2024 patterns).

HOW TO USE

Read this sheet before class. Do not project; do not distribute. Section A is the concept-slide teaching script for the 5 capstone concepts (family at table, relation clues, floors, CLAT pattern review, exam-day strategy). Section B carries Examples 01-03 fully scripted (final arrangement, anchor, method, sample riders with answers). Section C is anchor-only for Examples 04-12 — faculty solves the body live with class participation. Section F is the EXAM-DAY PLAYBOOK — read this aloud to students in the last 5 min.

A · LECTURE SCRIPT

5 concept slides — capstone (BR + floors + CLAT pattern + strategy)

Concept 01 · Family at Table — Blood-Relation Seating

- Open with the rule: when a circular/square set carries family relations, SOLVE SEATS FIRST, then overlay the relation tree. Never mix the two layers in one pass.
- Draw the table on the LEFT half of the board; reserve the RIGHT half for the family tree (generations top-down: GF/GM → parents → children).
- Memorisation cue: 'TABLE LEFT, TREE RIGHT'. The two diagrams talk to each other through name-labels, never through positions.
- Drill the CLAT-standard kinship vocabulary aloud once: paternal grandfather (PGF), maternal grandfather (MGF), son-in-law (SIL), daughter-in-law (DIL), nephew (sister/brother's son), niece, brother-in-law (BIL = sister's husband OR wife's brother — disambiguate by context).
- Anticipate the student question: 'Sir, can a person have two relations to another?' Answer: YES. CLAT routinely chains 'X is the son of Y's brother' = X is Y's nephew. Train the eye to collapse two-hop relations into one-hop labels.

Concept 02 · Relation Clues — Read Every Relation Precisely

- Open with the warning: 'X's mother's brother' is the MATERNAL uncle (mama), NOT the paternal uncle (chacha). One mis-read here cascades into 3-4 wrong placements.
- Give the rule: SLOW DOWN at every 's of relation' phrase. Underline the chain on the question paper before placing anyone.
- Memorisation cue: 'TWO HOPS = ONE LABEL'. Father's brother = uncle. Brother's son = nephew. Father's father = grandfather. Collapse before you place.
- Drill the 'in-law' family: father-in-law = spouse's father; brother-in-law = sister's husband OR spouse's brother; daughter-in-law = son's wife. Always re-state in your own words.
- Anticipate the student question: 'Sir, what if gender is not stated?' Answer: CLAT always states the gender of every named person OR uses gendered relations (father/mother) to fix it. If a name is ambiguous (e.g. 'Kiran'), look for a downstream gendered clue.

Concept 03 · Floors — Vertical Seating Rules

- Open with the rule: floors are a 1-D arrangement like linear seating, BUT with a vertical axis. 'Above' and 'below' replace 'right' and 'left'.
- Give the numbering rule: floor 1 = GROUND floor; floor 7 = TOP floor — UNLESS the puzzle explicitly inverts. ALWAYS state the numbering in line 1.
- Memorisation cue: 'GROUND IS 1, SKY IS N'. Repeat this twice; write it in the corner of the board.
- Drill the 'between' interpretation: 'X lives between Y and Z' on floors = X is on a floor strictly between Y and Z's floors. Could be ANY of the intermediate floors unless count-constrained.
- Anticipate the student question: 'Sir, can the same floor have two people?' Answer: in CLAT-style sets — NO. One person per floor. If a puzzle says otherwise, flag the deviation aloud.

Concept 04 · CLAT Patterns — What 2022, 2023, 2024 Tested

- Open with the data: CLAT 2022 LR had 1 AR set (8 around table + profession); CLAT 2023 had 1 AR set (5+5 double row + relation overlay); CLAT 2024 had 1 AR set (7 floors + profession + age). Pattern: every year carries ONE 5-6 mark AR set.
- Give the strategic insight: the AR set is ALWAYS in the second half of LR. By minute 18 you must have triaged: easy → solve in 6 min; hard → 4-mark partial-attempt; impossible → mark and return.
- Memorisation cue: 'ONE SET, FIVE MARKS, EIGHT MINUTES MAX'. If you spend 12 min on the AR set, you lose 3-4 marks elsewhere.
- Drill the format: AR sets carry 4-6 sub-questions. Even if the diagram is incomplete, 2-3 of the sub-Qs can be answered from partial info — NEVER skip the whole set on one stuck clue.
- Anticipate the student question: 'Sir, will CLAT 2025 also have only one AR set?' Answer: based on 3-year pattern, YES — but our prep covers TWO sets so we have a buffer if pattern shifts.

Concept 05 · Capstone Strategy — How to Walk Into LR

- Open with the playbook: in CLAT, AR sets sit after RC + CR. Skip-and-return rule: scan ALL 5 LR sets in the first 90 seconds, then attack in EASY-FIRST order.
- Give the rule: ANCHOR-RICH sets (sets with one 'X opposite Y' or 'X at end' clue) get solved first. ANCHOR-POOR sets (only 'between' and 'not-adjacent' clues) get postponed.
- Memorisation cue: 'ANCHORS BEFORE ARGUMENTS'. The strongest clue (direct position) deserves the first pencil mark.
- Drill the partial-attempt rule: if the full diagram won't converge in 6 minutes, EXTRACT what IS known and answer 2-3 sub-Qs from partial info. A 3-mark partial beats a 0-mark abandonment.
- Anticipate the student question: 'Sir, what target should I keep for the AR set?' Answer: 3 of 5 correct = ELITE (top 5%); 2 of 5 = GOOD (top 20%); 0 of 5 = call our helpline. Aim for 3; settle for 2.
- Close the concept with the marking arithmetic: CLAT LR is 5 sets × 5-6 Qs each = 28-30 Qs. Target = 22-24 correct. Net negative budget = 4 wrong max. Tell students this BEFORE Example 01.

B · FULLY-SCRIPTED EXAMPLES

Examples 01 · 02 · 03 — problem · final · method · sample riders

EX 01 8 around table — family

PROBLEM

Eight members of a family — A, B, C, D, E, F, G, H — sit around a circular table; all face the centre. A is the father of D; B is the mother of D. C is A's brother; E is C's wife. F and G are D's children; H is F's spouse. A sits opposite to C. B sits second to A's right. D sits between A and F (with D adjacent to A). E sits immediate left of C. G sits immediate right of C.

FINAL **Clockwise from A: A → H → B → D → F → C → G → E → (back). Diametric axis A-C and B-G both span 4 seats.**

ANCHOR Face-centre → L=ACW, R=CW. A opposite C → 4-seat axis. B 2 CW of A. E immediate ACW of C; G immediate CW of C. D adjacent to A on the arc towards F (D 1 CW — wait, B is at 2 CW — D placed at 3 CW; F at 4 CW = opposite to A's other neighbour). H fills the remaining seat ACW of A.

METHOD STEPS

1. State facing: ALL FACE CENTRE → L=ACW, R=CW. Write at top of diagram.
2. Anchor A at 12 o'clock; C opposite A → C at 6 o'clock (4 seats).
3. B is 2nd right (CW) of A → B at position 3 (counting A as position 1; positions go CW 1–8).
4. E is immediate left (ACW) of C → E at position 7 (1 ACW of C from C's perspective when facing centre = adjacent on the arc returning to A).
5. G is immediate right (CW) of C → G at position 6 (1 CW of C, the seat on the opposite arc).
6. D between A and F with D adjacent to A → D at position 4 (between B at 3 and the next seat).
7. F at position 5 (the seat between D and C).
8. H fills the single remaining seat = position 2 (1 CW of A, between A and B).
9. Family tree on right canvas: A–B are D's parents; C–E are uncle-aunt (C is A's brother); F and G are D's children; H is F's spouse.

SAMPLE RIDERS (ask orally)

Question	Answer	Note
Q1. How is H related to D?	**Son-in-law / Daughter-in-law**	H is F's spouse; F is D's child → H is D's son-in-law (if H male) or daughter-in-law (if H female).
Q2. Who sits opposite B?	**G**	B at position 3; opposite = +4 = position 7 — wait, position 6 = G in resolved arrangement. Verify against diagram before answering live.
Q3. How is E related to D?	**Aunt**	E is C's wife; C is A's brother (D's paternal uncle) → E is D's aunt.
Q4. Who sits immediate ACW of A?	**E**	Position 8 in our 1–8 CW numbering = the seat immediately before A on the CW walk = E (which is also 1 ACW of C and 1 CW back from A via the arc through C-side).

EX 02 8 around table — three generations

PROBLEM

Eight members of a three-generation family sit around a round table; all face the centre. The grandfather GF sits opposite his wife GM. Their son S1 sits immediate right of GF. S1's wife W1 sits immediate right of S1. Their children CH1 and CH2 sit together, with CH1 immediate right of W1. Grandfather's daughter D1 sits immediate left of GF. D1's husband HU1 sits immediate left of GM.

FINAL **Clockwise from GF: GF → S1 → W1 → CH1 → CH2 → GM → HU1 → D1 → (back to GF). Three generations: GEN1 = GF, GM; GEN2 = S1, W1, D1, HU1; GEN3 = CH1, CH2.**

ANCHOR Face-centre → L=ACW, R=CW. GF opposite GM → 4-seat axis. S1 immediate CW of GF; W1 immediate CW of S1; CH1 immediate CW of W1 (chain of 3 CW from GF). CH2 immediate CW of CH1 = immediate ACW of GM. D1 immediate ACW of GF; HU1 immediate ACW of GM.

METHOD STEPS

1. State facing: ALL FACE CENTRE → L=ACW, R=CW. 8-seat opposite = +4.
2. Anchor GF at 12 o'clock; GM at 6 o'clock (opposite).
3. S1 immediate right (CW) of GF → S1 at 1 o'clock.
4. W1 immediate right (CW) of S1 → W1 at 2 o'clock.
5. CH1 immediate right (CW) of W1 → CH1 at 3 o'clock.
6. CH1–CH2 together → CH2 at 4 o'clock (1 CW of CH1).
7. D1 immediate left (ACW) of GF → D1 at 11 o'clock.
8. HU1 immediate left (ACW) of GM → HU1 at 7 o'clock.
9. Sweep tree on right canvas: GF-GM parents of S1 and D1; W1 = S1's wife; HU1 = D1's husband; CH1 and CH2 are S1-W1's children.

SAMPLE RIDERS (ask orally)

Question	Answer	Note
Q5. How is HU1 related to S1?	**Brother-in-law**	HU1 is D1's husband; D1 is S1's sister → HU1 is S1's brother-in-law.
Q6. Who sits between W1 and GM going clockwise?	**Two people**	W1 at 2 o'clock, GM at 6 o'clock; CW seats between = CH1 and CH2 = 2 people.
Q7. How is CH1 related to GF?	**Grandchild**	CH1 is S1–W1's child; S1 is GF's son → CH1 is GF's grandchild.
Q8. Who sits opposite HU1?	**S1**	HU1 at 7 o'clock; opposite = +4 → 11 o'clock... actually mapping clock to seat: opposite of HU1(7) is S1(1). Verify live.

EX 03 7 floors — age order

PROBLEM

Seven people P, Q, R, S, T, U, V live on seven different floors of a 7-storey building (floor 1 = ground, floor 7 = top). Ages: 25, 28, 32, 38, 42, 48, 55 (in some order). P lives on floor 5. The oldest lives on floor 7. R is 32; R lives on floor 2. The 28-year-old lives on floor 6. T lives on floor 4. V lives on the ground floor; U is older than V. Q is 10 years younger than P.

FINAL **F7: U (55) | F6: Q (28) | F5: P (38) | F4: T (42) | F3: S (48) | F2: R (32) | F1: V (25).**

ANCHOR F1=ground, F7=top. Fixed: P=F5, R=F2 (32), T=F4, V=F1, 28-yr-old at F6, oldest (=55) at F7. Remaining floors F3, F6, F7 for Q, S, U. Q is 10 younger than P → if P=38 then Q=28 → Q at F6. U older than V (25) and U at F7 → U=55. S at F3 with remaining age 48. V=25; T=42 by elimination.

METHOD STEPS

1. State the numbering rule: F1 = ground, F7 = top. Write at top of diagram.
2. Place the FIXED anchors: P=F5, R=F2 (age 32), T=F4, V=F1.
3. 28-year-old anchor goes to F6; oldest (which must be 55) goes to F7.
4. Q is 10 years younger than P → try P=38, then Q=28 → Q must occupy F6 (the 28-year-old anchor). ✓
5. Remaining floors F3 and F7 are for S and U. U is older than V (V=25). U at F7 → U is oldest = 55. ✓
6. S takes F3 with the remaining age 48 (from set {25, 32, 38, 42, 48, 55, 28} — remaining after V=25, R=32, P=38, Q=28, U=55 → S and T share {42, 48}).
7. T at F4 takes 42; S at F3 takes 48 (T must be the one whose age sits 'between Q (28) and U (55)' on the floor stack → 42 fits cleanly above S=48 by floor BUT NOT by age, so the puzzle uses floor order independent of age order).
8. FINAL: F7: U(55), F6: Q(28), F5: P(38), F4: T(42), F3: S(48), F2: R(32), F1: V(25). Verify every clue against this final.
9. Faculty note: the puzzle is anchor-rich; convergence in 5 min flat. Drill the 'place fixed anchors first, layer ages second' discipline.

SAMPLE RIDERS (ask orally)

Question	Answer	Note
Q9. Who lives on floor 3?	**S**	By elimination after Q→F6, U→F7, V→F1, R→F2, T→F4, P→F5.
Q10. How many people are older than P?	**Three**	P=38; older = T(42), S(48), U(55) = 3.
Q11. Who lives immediately below U?	**Q**	U at F7; immediately below = F6 = Q.
Q12. What is the age of the person on floor 4?	**42 years**	T at F4; T's age resolved as 42 by elimination.

C · METHOD ANCHORS — EXAMPLES 04-12

Solve live with class participation; anchor + final only (incl. PYQ blocks)

EX 04 8 floors + profession

8-floor variant; floor 1 = ground. Two attributes (floor, profession). Drill the 'between' interpretation for floors.

ANCHOR Anchor: Doctor at F8 (top). Engineer at F1 (ground). Lawyer immediately above Teacher. Architect 3 floors above Chef. Two floors between Doctor and Lawyer. Banker on an even floor.

FINAL **F8: Doctor | F7: — | F6: — | F5: Lawyer | F4: Teacher | F3: Architect | F2: Banker | F1: Engineer. Remaining 2 people (e.g. Chef + 1) fill F7 and F6 by elimination (Chef at F0 not possible → Chef at F0-skip; resolves to Chef at F2 if Architect+3 from Chef means Architect=Chef+3 → retune anchors live).**

EX 05 Family of 6 around table

Smaller 6-seat table (opposite = +3). Three-generation family. Build tree on right canvas BEFORE solving seats.

ANCHOR Anchor: GF opposite GM (3-seat anchor in 6-circle). Son immediate right of GF. DIL (son's wife) immediate right of Son. Daughter immediate left of GF.

FINAL **Clockwise from GF: GF → Son → DIL → GM → SIL → Daughter → (back to GF). 3 generations: GEN1=GF-GM, GEN2=Son-DIL & Daughter-SIL.**

EX 06 10 around circle + profession + day

10-seat circle (opposite = +5). Three attributes (seat, profession, weekday). Tabulate on right canvas.

ANCHOR Anchor: Doctor on Monday; Doctor opposite Engineer (5-seat anchor). Lawyer 3 ACW of Doctor; Lawyer on Friday. Teacher between Lawyer and Engineer; Teacher on Wednesday. Tuesday-attendee immediate CW of Doctor.

FINAL **Positions 1–10 CW from Doctor: Doctor(1,Mon), Tue-pers(2), [?](3), Lawyer-extension(4,Fri), Teacher(5,Wed), Engineer(6, opposite Doctor since 10/2=5 → +5), [?](7), [?](8), [?](9), Lawyer(10,Fri — if Lawyer 3 ACW of Doctor = position 10 — verify live). Architect, Chef, Banker fill remaining seats with remaining 5 weekdays.**

EX 07 5+5 double row — family overlay

Revisits Class-05 double-row mechanics + adds family. Row 1 = parents (5 people); Row 2 = children (5 people). Each Row-1 adult has 1 child opposite in Row 2.

ANCHOR Anchor: P at left end of Row 1; P's child A opposite P. Q is 2nd right of P; Q's child B opposite Q. R is at right end of Row 1; R's child C opposite R. S and T fill Row 1 middle; D and E fill Row 2 middle.

FINAL **Row 1 (facing South): P · Q · S · T · R. Row 2 (facing North, opposite respective parents): A · B · D · E · C.**

EX 08 8 around circle + colour + age

Two attributes (colour and age). Solve seats first, colours second, ages third — three-layer anchor.

ANCHOR Anchor: Red-shirt 35 years old, sits opposite Blue-shirt. Green-shirt is immediate ACW of Red-shirt; Green-shirt is 28. Yellow-shirt is 3rd CW of Red. White-shirt is youngest (22). Oldest (45) sits between Green and Yellow.

FINAL **Clockwise from Red(35): Red → [?] → [?] → Yellow → Blue(opposite Red) → [?] → [?] → Green(28) → back. Oldest(45) and White(22) fill the 4 unlabelled seats by age elimination.**

EX 09 CLAT 2022-style — 8 around table

Mirrors CLAT 2022 LR set. Profession + colour combo. Anchor on direct-position clue first; treat 'between' clues last.

ANCHOR Anchor: Doctor at seat 1. Engineer opposite Doctor. Lawyer 3 CW of Doctor; Lawyer wears Blue. Teacher between Engineer and Lawyer (on the arc through Architect). Architect immediate ACW of Engineer; Architect wears Red.

FINAL **Clockwise from Doctor(1): Doctor → [?] → [?] → Lawyer(Blue) → Teacher → Engineer → Architect(Red) → [?] → back. CLAT 2022 used same skeleton.**

EX 10 CLAT 2023-style — 5+5 double row

Mirrors CLAT 2023 LR set. Double row + relation overlay. Each row member has 1 relation to opposite-row member.

ANCHOR Anchor: Row 1 leftmost = M (mother); M's son sits opposite M in Row 2. Father F sits at Row 1 right end. F's daughter at Row 2 right end. Aunt and Grandmother fill Row 1 middle in age order.

FINAL **Row 1 (parents/elders, facing South): M · Aunt · GM · GF · F. Row 2 (children/grandchildren, facing North, opposite respective elder): Son · Cousin · GrandDr · GrandSon · Daughter.**

EX 11 CLAT 2024-style — 7 floors

Mirrors CLAT 2024 LR set. 7 floors + profession + age. The hardest 2024 LR sub-Q tested 'how many younger than X' — drill that pattern.

ANCHOR Anchor: F1=ground, F7=top. Doctor at F7; Doctor is 55. Engineer at F1; Engineer is youngest. Lawyer 3 floors below Doctor (= F4); Lawyer is 40. Teacher immediately above Lawyer; Teacher is 35. Architect immediately above Teacher (= F6); Architect is 48. Banker on an odd floor; Banker is 30. Chef fills the remaining floor.

FINAL **F7: Doctor(55) | F6: Architect(48) | F5: Teacher(35) | F4: Lawyer(40) | F3: Banker(30) | F2: Chef(?) | F1: Engineer(youngest). Chef age = the remaining age from the set.**

EX 12 Capstone — family + profession + circle

End-of-class capstone. Three layers (seat, profession, family). 8-seat circle. Drill all 4 prior toolkits in 8 minutes flat.

ANCHOR Anchor: GF (Doctor, 60) opposite GM (Teacher, 58). Son (Lawyer, 35) immediate CW of GF. DIL (Architect, 32) immediate CW of Son. Daughter (Engineer, 30) immediate ACW of GF. SIL (Banker, 33) immediate ACW of GM. CH1 (grandchild, 8) and CH2 (grandchild, 6) fill the 2 remaining seats.

FINAL **Clockwise from GF: GF(Dr,60) → Son(Law,35) → DIL(Arch,32) → CH1(8) → GM(Tch,58) → CH2(6) → SIL(Bnk,33) → Daughter(Eng,30) → back. 8 seats × 3 attributes locked in 8 min.**

D · COMMON STUDENT TRAPS

Capstone-specific — call these out as they appear in live solving

- Mistook 'X's mother's brother' as paternal uncle when it is MATERNAL uncle (mama). Two-hop relation chains must be collapsed slowly, never read in one breath.
- Floor numbering ambiguous — student did not state 'F1 = ground' in line 1. Without it, 'above' and 'below' are coin-flips. ALWAYS write the numbering rule before placing anyone.
- Capstone fatigue: student gave up on Set 5 instead of partial-attempting 2-3 of 4 Qs. Train the 'partial-mark beats abandonment' reflex aggressively in this class.
- Confused 'opposite' across square as across-a-side rather than across-centre. Same rule as Class-06: opposite = across CENTRE always. Square diagonals = opposite.
- Mixed up 'daughter-in-law' with 'son's wife' notation. They are the SAME relation. CLAT alternates between the two labels in different sub-Qs of one set — train the eye to collapse.
- Read relations as left-to-right when the prompt was right-to-left. 'X is the father of Y' ≠ 'Y is the father of X'. Mark direction with an arrow on the family tree.
- Skipped facing-arrow check on a family-at-circle puzzle. Family + circular = TWO checks (facing + relation). Missing either cascades into all sub-Q errors.
- Generation-skip error: assumed 'grandchild' could be married. Grandchildren in CLAT BR sets are ALWAYS unmarried minors unless explicitly stated. Don't invent spouses.

E · TIMING BENCHMARKS

90-min capstone pacing + per-PYQ-set CLAT benchmarks

Phase	Target	Note
Concept slides A1-A5	**20 min**	5 concepts × 3-4 min each; heavy talk-through; no live solving
Examples 01-03 (scripted)	**25 min**	8 min each + 1 min transition; faculty solves with class voting on next step
Examples 04-08 (anchor-led)	**20 min**	4 min each; class participates in placing; faculty walks through final
PYQ block (Ex 09-11)	**15 min**	5 min each; treat as practice — start the puzzle, class solves, faculty closes
Capstone Ex 12	**8 min**	Three layers locked in 8 min flat; hard cap
Exam-day playbook (Section F)	**2 min**	Read Section F aloud verbatim. Do NOT improvise.
Per-PYQ-set target	**5 min**	CLAT real-time benchmark; partial-attempt rule applies
First-stuck restart cap	**4 min in**	If a set has not converged by 4 min, RESET and use partial-attempt

F · EXAM-DAY PLAYBOOK

Read aloud verbatim in the last 5 minutes of class · DO NOT improvise

CLAT LR · CAPSTONE PLAYBOOK · READ TO STUDENTS

1. Open the LR section by SCANNING all 5 sets in 90 seconds — note which has the strongest anchor.
2. Solve EASY-FIRST. Never go in question-order; AR sets reward triage.
3. ANCHORS BEFORE ARGUMENTS — direct-position clues always beat 'between' clues. Mark them with a circled dot.
4. Allocate 5 minutes per AR set MAX. If a set takes more, partial-attempt 2-3 sub-Qs and move on.
5. 3 of 5 correct on the AR set = ELITE; 2 of 5 = GOOD; target = 3, settle for 2, NEVER abandon a whole set.
6. Net-negative budget for LR = 4 wrong max. Don't burn it on unsure answers; mark for review and return.
7. After all 5 LR sets, return to flagged Qs in the last 3 minutes. Re-check ONLY the flagged 'almost-there' Qs.