CHEMISTRY — CLASS 12

Paper Pairing Scheme & Exam Strategy 2026

AJK (Mirpur) Board | Federal Board (FBISE) | Theory: 85 + PBA: 15 = 100 Marks

Practical Based Assessment (PBA) — New Format 2026: The traditional practical exam has changed. PBA is now a single-day 30-mark assessment: **15 marks for Class 11 content** + **15 marks for Class 12 content**, conducted simultaneously across the board.

PAPER PATTERN — TOTAL: 85 THEORY + 15 PBA = 100

Section	Type	Total Qs	Attempt	Marks	Total
Section A	MCQs (Objective)	17	17 (All)	1	17
Section B	Short Questions	—	All req.	3	48
Section C	Long Questions	8	4	6 or 7	20
PBA	Practical Based Assess.	—	—	—	15
				Grand Total	**100**

FORMATIVE CHAPTERS — NOT IN EXAM (Skip These 5)

Chapter	Title	Action
Ch 1	Ethics and Values in Chemistry	SKIP — Not examined
Ch 14	Organic Synthesis	SKIP — Formative only
Ch 15	Empirical Data Collection	SKIP — Formative only
Ch 22	Medicine	SKIP — Formative only
Ch 23	Industry	SKIP — Formative only

CHAPTER-WISE SLO DISTRIBUTION (Short · Long · Objective)

SECTION I — Inorganic & Physical Chemistry (Ch 2–6)

Ch#	Chapter Title	Short Qs	Long Qs	MCQs	Key Focus
Ch 2	Electrochemistry	3	1 (6 mk)	2	Ion-Electron method, Cell Potential, Numericals
Ch 3	Chemical Equilibrium	1	1 (6 mk)	1	Buffer topics (SQ), Equilibrium constants (LQ)
Ch 4	Acid-Base Chemistry	1	—	—	Short Q only; definitions & concepts
Ch 5	Group II Elements	3	1 (3 mk)	1	Properties of alkaline earth metals, reactions

Ch 6	Transition Metals	2	1 (6 mk)	3	Very important for MCQs (3); complex ions, colour

SECTION II — Organic Chemistry (Ch 7–13)

Ch#	Chapter Title	Short Qs	Long Qs	MCQs	Key Focus
Ch 7–8	Hydrocarbons	2	—	2	No Long Q; but prepare Benzene reactions as surprise topic
Ch 9	Haloalkanes	0	1	1	SN1/SN2 and E1/E2 mechanisms — Long Q focus
Ch 10	Hydroxy Compounds	1	1 (7 mk)	1	Alcohol reactions, oxidation, Lucas test
Ch 11	Carbonyl Compounds	4	—	1	Highest SQ count — 4 shorts; no Long Q
Ch 12	Nitrogen Compounds	2	1 (7 mk)	1	Amines, diazonium salts, coupling reactions
Ch 13	Polymers	2	—	1	Addition vs condensation; thermoplastics

SECTION III — Specialised & Analytical Chemistry (Ch 16–21)

Ch#	Chapter Title	Short Qs	Long Qs	MCQs	Key Focus
Ch 16	Bio-Chemistry	1	—	1	Short Q + MCQ only; amino acids, DNA basics
Ch 17	Qualitative Analysis / Spectrometry	—	1 (Num.)	—	Numerical-based Long Q — no shorts
Ch 18	Spectroscopy	2	1 (3 mk)	—	IR/NMR interpretation; paired with Ch 17
Ch 19	Chromatography	1	—	1	Minimal — 1 SQ or MCQ
Ch 20	Materials Chemistry	1	—	1	Minimal — 1 SQ or MCQ
Ch 21	Agriculture Chemistry	1	—	1	Minimal — 1 SQ or MCQ

■ *Green = Must-prepare (Long + Short Qs)* ■ *Yellow = Organic SQ focus only* ■ *Blue = Numerical Long Q* ■ *Amber = Low priority*

LONG QUESTION PAIRINGS (Section C — Attempt 4 of 8)

Pro-tip: Expect 3 to 4 numerical-based questions in the long section. Chapters 2 and 17 are confirmed numericals — prepare worked examples thoroughly.

Pair	Chapters Paired	Topics to Prepare	Marks	Numerical?

Pair 1	**Ch 2 Electrochemistry**	• Ion-Electron method (balancing redox equations) • Cell Potential calculations and Nernst equation • Electrolytic vs galvanic cells • Faraday's laws (numerical-based)	6 mk	**YES — Heavy**
Pair 2	**Ch 3 + Ch 9**	Ch 3: Equilibrium constants, Le Chatelier's principle, buffer calculations Ch 9: SN1/SN2 mechanism, E1/E2 elimination, conditions & stereochemistry	6 mk	**Ch 3: Num. Ch 9: Theory**
Pair 3	**Ch 12 + Ch 10**	Ch 12: Amine classification, diazonium salt reactions, coupling reaction Ch 10: Alcohol reactions, oxidation states, Lucas test, esterification	7 mk	Moderate
Pair 4	**Ch 17 + Ch 5 or Ch 18**	Ch 17: Spectrometry numericals — mass spec, calculations (confirmed numerical) Ch 5: Group II elements properties, extraction, compounds Ch 18: IR/NMR spectroscopy interpretation (3-mark portion)	3–6 mk	**Ch 17: YES**

★ *Benzene reactions (Nitration, Sulfonation, Friedel-Crafts) from Ch 7–8 may appear as a "surprise" long question — prepare as a bonus topic.*

SCORING STRATEGY — TARGET YOUR MARK BAND

Target	What to Prepare	Key Chapters
Pass / 60+ Marks	• Organic Chemistry short questions (Ch 7–13) — thoroughly • Inorganic short questions: Ch 3 (buffer) and Ch 5 • Textbook exercise MCQs (14–15 out of 17 come from here) • Any 2–3 long questions you are comfortable with	Ch 3, 5, 7, 8, 9, 10, 11, 12, 13
Full / High Marks	• Electrochemistry (Ch 2): Ion-Electron + Cell Potential numericals • Chemical Equilibrium (Ch 3): Buffer + Kc/Kp calculations • Haloalkanes (Ch 9): SN1/SN2 + E1/E2 mechanisms fully • Spectrometry (Ch 17): All numerical types practised • All organic short Qs + MCQ revision of all chapters	Ch 2, 3, 6, 9, 10, 12, 17

MCQ STRATEGY (Section A — 17 Marks)

MCQ Count	Chapters	Action
3 MCQs	Ch 6 (Transition Metals)	Highest MCQ chapter — revise all complex ion types, colour, catalysis
2 MCQs	Ch 2 (Electrochemistry), Ch 7–8 (Hydrocarbons)	Standard formula-based and definition MCQs
1 MCQ	Ch 3, 5, 9, 10, 11, 12, 13, 16, 19, 20, 21	Revise chapter-end exercise MCQs for each

Key tip	14–15 of 17 MCQs	Come directly from textbook exercises — this is your easiest section if exercises are revised

FINAL PREPARATION PRIORITY LIST

Rank	Task	Chapter(s)	What to Prepare
1st	Electrochemistry Long Q + Numericals	Ch 2	Ion-electron method, cell potential, Nernst equation, Faraday's laws — work through all textbook examples
2nd	Organic Short Questions	Ch 7–13	Ch 11 has 4 short Qs alone — prepare all organic chapters for Section B; key for scoring 60+ marks
3rd	Haloalkanes — Long Q Mechanisms	Ch 9	SN1/SN2 (conditions, stereochemistry, carbocation stability) + E1/E2 (elimination, Zaitsev's rule)
4th	Spectrometry — Numerical Long Q	Ch 17	All numerical types — mass spectrometry calculations, confirmed as numerical long question
5th	Nitrogen Compounds + Hydroxy Compounds	Ch 12, Ch 10	Pair 3 long questions — amines, diazonium coupling; alcohol reactions and Lucas test
6th	Transition Metals MCQs + Short Qs	Ch 6	3 MCQs from Ch 6 alone — highest MCQ chapter; complex ions, colour, catalytic properties
7th	Chemical Equilibrium + Group II	Ch 3, Ch 5	Buffer short Q (Ch 3); equilibrium constants for LQ; Group II properties and compounds
8th	MCQ Revision — All Chapters	All (ex. formative)	Every chapter-end exercise MCQ — 14–15 of 17 MCQs come directly from here

QUICK REVISION CARD

Section	Best Chapters	Skip / Low Priority
Short Qs (B)	Ch 11 (4) ★, Ch 2 (3), Ch 5 (3), Ch 7–8 (2), Ch 12 (2)	Ch 4 (1 SQ only), Ch 17 (no SQ)
Long Qs (C)	Pair 1: Ch2 | Pair 2: Ch3+9 | Pair 3: Ch12+10 | Pair 4: Ch17+5/18	Ch 7–8, 11, 13 — no Long Qs
Numericals	Ch 2 (heavy), Ch 3 (Kc/Kp), Ch 17 (confirmed)	3–4 numerical LQs expected total
MCQs (A)	Ch 6 (3 MCQs!) ★, Ch 2, Ch 7–8 (2 each)	Ch 4, 18 — zero MCQs
Formative	Ch 1, 14, 15, 22, 23 — DO NOT STUDY	Skip entirely — not in exam