CLASS 12 BIOLOGY — LO's Aligned Monthly Split-up Syllabus (April 2026–March 2027) + Portion Boundaries + Exams + Weightage + Question Paper Design + Blueprint
(For CM SoE & Non-CM SoE)
Developed by:- Jharkhand Council Of Educational Research & Training (Curriculum Division)

Month	Teaching Days (Available)	NCERT Chapter Titles	Sub-topics / Portion Boundary	LOs (*LO Mapping - IDs) (NCERT Learning Outcomes at Higher Secondary Stage - Biology, Class XII)	Practicals / Activities (Minimum)	Assessment / Exams
Apr 2026	23	BIO: Chapter 1 Sexual Reproduction in Flowering Plants (Complete); BIO: Chapter 2 Human Reproduction (Start)	Ch 1 complete: flower structure; development of male and female gametophytes; pollination; pollen-pistil interaction; double fertilisation; post-fertilisation events; apomixis, parthenocarpy and polyembryony. Ch 2 start: overview of male and female reproductive systems, microscopic anatomy of testis and ovary, gametogenesis (intro). Portion boundary: Chapter 1 complete; Chapter 2 started.	BIO-XII-LO-01, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-10, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-17, BIO-XII-LO-20	Observe and label reproductive structures in flowering plants; pollen germination/demo/ICT; diagram practice for male and female reproductive organs; introductory MCQ + case-based questions.	Project RAIL (April portion): 04-05-2026
May 2026	14	BIO: Chapter 2 Human Reproduction (Finish); BIO: Chapter 3 Reproductive Health (Complete)	Ch 2 complete: menstrual cycle, fertilisation, embryo development up to blastocyst, implantation, pregnancy, placenta formation, parturition and lactation. Ch 3 complete: reproductive health, STDs, birth control methods, MTP, amniocentesis, infertility and ART. Portion boundary: Chapters 2–3 complete.	BIO-XII-LO-01, BIO-XII-LO-02, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-16, BIO-XII-LO-18	Prepare comparison chart of contraceptive methods; STD awareness poster; ART flowchart; foetal development stages chart; short answer and assertion-reason practice.	Project RAIL (May portion): 15-06-2026
Jun 2026	12	BIO: Chapter 4 Principles of Inheritance and Variation (Start/Continue)	Ch 4 start: Mendel's experiments; monohybrid and dihybrid crosses; laws of inheritance; deviations from Mendelism — incomplete dominance, codominance, multiple alleles, blood groups, pleiotropy. Portion boundary: Chapter 4 Part-I complete.	BIO-XII-LO-01, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-05, BIO-XII-LO-06, BIO-XII-LO-07, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-14, BIO-XII-LO-20, BIO-XII-LO-21	Genetics problem solving (monohybrid/dihybrid); pedigree basics; family trait survey using non-sensitive traits; Punnett square practice and recap worksheets.	Project RAIL (June portion): 06-07-2026
Jul 2026	23	BIO: Chapter 4 Principles of Inheritance and Variation (Finish); BIO: Chapter 5 Molecular Basis of Inheritance (Start)	Ch 4 complete: chromosome theory of inheritance; linkage and crossing over; sex determination in humans, birds and honey bee; sex-linked inheritance; Mendelian and chromosomal disorders. Ch 5 start: search for genetic material, DNA as genetic material, structure of DNA and RNA, DNA packaging, DNA replication. Portion boundary: Chapter 4 complete; Chapter 5 Part-I complete.	BIO-XII-LO-01, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-05, BIO-XII-LO-06, BIO-XII-LO-07, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-16, BIO-XII-LO-17, BIO-XII-LO-20	DNA double helix model (eco-friendly); pedigree chart practice; sex-linked inheritance numericals; DNA replication animation/ICT and concept notes.	Project RAIL (July portion): 03-08-2026
Aug 2026	22	BIO: Chapter 5 Molecular Basis of Inheritance (Finish); BIO: Chapter 6 Evolution (Complete)	Ch 5 complete: central dogma; transcription; genetic code; translation; gene expression and lac operon; human genome project; DNA fingerprinting. Ch 6 complete: origin of life; evidences and theories of evolution; adaptive radiation; Hardy-Weinberg principle; human evolution. Portion boundary (Half-Yearly): Chapters 1–6 complete.	BIO-XII-LO-01, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-05, BIO-XII-LO-06, BIO-XII-LO-07, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-16, BIO-XII-LO-17, BIO-XII-LO-18, BIO-XII-LO-21	Central dogma flowchart; genetic code chart; evolution evidences portfolio; Hardy-Weinberg problem practice; Half-yearly revision sheet and competency-based questions.	Half Yearly Examination: 07-09-2026 to 12-09-2026 (covers Apr–Aug taught portion)
Sep 2026	14	BIO: Chapter 7 Human Health and Disease (Complete); BIO: Chapter 8 Microbes in Human Welfare (Complete)	Ch 7: pathogens, immunity, vaccines, AIDS, cancer, drugs and alcohol abuse. Ch 8: microbes in household products, industrial products, sewage treatment, biogas, biocontrol and biofertilisers. Post half-yearly remediation + application-based practice. Portion boundary: Chapters 7–8 complete.	BIO-XII-LO-01, BIO-XII-LO-02, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-16, BIO-XII-LO-18	Immunity chart; vaccine and disease mapping; fermentation products table; sewage treatment flow diagram; case-based questions and remedial discussion.	Project RAIL (September portion): 05-10-2026
Oct 2026	21	BIO: Chapter 9 Biotechnology: Principles and Processes (Complete); BIO: Chapter 10 Biotechnology and its Applications (Complete); BIO: Chapter 11 Organisms and Populations (Start)	Ch 9: principles of biotechnology; tools and processes including restriction enzymes, vectors, PCR, bioreactors and downstream processing. Ch 10: Bt cotton, RNAi, transgenic animals, gene therapy, molecular diagnosis, GMOs, biosafety and bioethics. Ch 11 start: organism and environment; population attributes and growth models. Portion boundary: Chapters 9–10 complete; Chapter 11 started.	BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-05, BIO-XII-LO-06, BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-10, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-16, BIO-XII-LO-17, BIO-XII-LO-18, BIO-XII-LO-20, BIO-XII-LO-21	Biotech tools concept map; PCR / electrophoresis overview via ICT; GMO case discussion; population growth graph practice and PYQ drill.	Project RAIL (October portion): 02-11-2026

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Nov 2026	16	BIO: Chapter 11 Organisms and Populations (Finish); BIO: Chapter 12 Ecosystem (Complete); BIO: Chapter 13 Biodiversity and Conservation (Complete) + Quick Revision	Ch 11 complete: interactions and population ecology. Ch 12 complete: ecosystem structure and function, productivity, decomposition, energy flow, ecological pyramids, . Ch 13 complete: biodiversity levels, patterns, loss of biodiversity and conservation strategies. Portion boundary: Full syllabus completed (Chapters 1–13).	BIO-XII-LO-02, BIO-XII-LO-03, BIO-XII-LO-04, BIO-XII-LO-06, BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-10, BIO-XII-LO-11, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-17, BIO-XII-LO-18, BIO-XII-LO-19, BIO-XII-LO-20, BIO-XII-LO-21	Ecological pyramid; biodiversity conservation caselets; final chapterwise revision; practical record completion and viva question bank.	Syllabus completion target for Class 12: Nov 2026
Dec 2026	15	Full Syllabus Practice & Remedial (Pre-Board Block) + Practical/Viva Revision	Full syllabus mixed practice: board-pattern subjective + objective + case-based questions; high-frequency diagrams; genetics numericals; biotechnology and ecology applications; targeted remedial teaching.	BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-10, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-17, BIO-XII-LO-18, BIO-XII-LO-19, BIO-XII-LO-20, BIO-XII-LO-21	Minimum: 2 full mock papers + analysis; practical file completion; specimen/slide/model identification; viva preparation and topic-wise error correction.	Pre-Board + Remedial + Practice: 07-12-2026 to 12-12-2026 (Full syllabus)
Jan 2027	17	Revision + Sample Papers + Previous Year Questions + Pre-Board-II / Mock Test (Full syllabus)	Complete syllabus revision through chapter/unit-wise recap and mixed board-pattern practice; focus on weak areas identified in Pre-Board, answer presentation, time management and concept retention.	BIO-XII-LO-07, BIO-XII-LO-09, BIO-XII-LO-10, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-17, BIO-XII-LO-18, BIO-XII-LO-19, BIO-XII-LO-20, BIO-XII-LO-21	Weekly timed mock tests + item-wise analysis + doubt clearance + targeted remediation.	Pre-Board-II / Mock Test (Full syllabus): as per Board/school schedule
Feb 2027	18	Board Examination Preparation / Board Examination	Final revision and examination readiness; mixed practice of important terms, diagrams / numericals / source-based / case-based / application questions as applicable to the subject.	BIO-XII-LO-07, BIO-XII-LO-11, BIO-XII-LO-12, BIO-XII-LO-13, BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-18, BIO-XII-LO-19, BIO-XII-LO-20, BIO-XII-LO-21	Rapid revision sheets + oral viva / practical / project support (where relevant) + teacher feedback.	Board Examination (as per Board schedule)
Mar 2027	20	Board Examination (continued, if applicable) / Post-exam Academic Support	Board examination continuation / light post-exam academic engagement, bridge work, reading / enrichment / record completion as applicable.	BIO-XII-LO-14, BIO-XII-LO-15, BIO-XII-LO-18, BIO-XII-LO-19, BIO-XII-LO-21	Bridge activities / portfolio / reading enrichment / feedback.	Board Examination / Post-exam school support (as applicable)

LOs (*LO Mapping - IDs) (NCERT Learning Outcomes at Higher Secondary Stage - Biology, Class XII)

LO ID	NCERT Learning Outcome (Higher Secondary Stage - Biology, Class XII)
BIO-XII-LO-01	differentiates organisms, phenomena and processes based on characteristics and salient features, such as reproduction in organisms, reproductive parts of flowers, autogamy/geitonogamy, innate/acquired immunity, vaccination, divergent/convergent evolution, transcription/translation, inbreeding/outbreeding, in-vitro/in-vivo fertilisation, genotype and phenotype.
BIO-XII-LO-02	relates processes and phenomena with causes and effects, such as diseases with symptoms, production with use of fertilisers, menstruation and hygiene, pregnancy and embryonic development.
BIO-XII-LO-03	applies scientific terminology for organisms, processes and phenomena using accepted conventions, such as parthenocarpic fruits, polyembryony, seminiferous tubules, parthenogenesis, pericarp, microsporangia, geitonogamy, albuminous seeds, apomixis, MTP, AIDS, mutation, pleiotropy, sex determination, plasmid, vectors, GMO, biomass, ecological pyramids and biomagnification.
BIO-XII-LO-04	explains systems, relationships, processes and phenomena, such as double fertilisation, flower as a modified shoot, embryonic development in mammals, xeric/hydric adaptations, STIs, Mendelian and chromosomal disorders, human genome project, retrovirus replication, population interactions, energy flow, succession, DNA fingerprinting and evolution.
BIO-XII-LO-05	describes contributions of scientists/researchers in Biology, such as Mendelian genetics, Morgan's work on linkage and recombination, Hershey-Chase experiment and Watson-Crick model of DNA.
BIO-XII-LO-06	makes linkages at the interface of Biology with other disciplines, such as mathematical models of monohybrid/dihybrid crosses, pedigree analysis, molecular basis of DNA/RNA, recombinant DNA technology, bioprocess engineering and population growth curves.
BIO-XII-LO-07	draws labelled diagrams, flow charts, concept maps and graphs, such as reproductive parts of flowers, decomposition cycle in terrestrial ecosystem, nutrient cycles, human reproductive systems, ecological pyramids and life cycle of Plasmodium.
BIO-XII-LO-08	prepares slides to study structural intricacies of life forms and structural organisations, such as staining of nucleic acid by acetocarmine.

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BIO-XII-LO-09	plans and conducts investigations/experiments to verify facts and answer queries, such as daughter cells after meiosis, ovum release stage, importance of independent assortment, soil nutrient status, water-holding capacity and xerophytic adaptations.
BIO-XII-LO-10	handles laboratory/agricultural tools, apparatus, instruments and devices properly for activities / investigations, such as agarose gel electrophoresis, pH meter and spectrophotometer.
BIO-XII-LO-11	analyses and interprets graphs and figures, such as species-area relationship graphs, crop yield after fertiliser use and effects of sewage discharge on river characteristics.
BIO-XII-LO-12	uses scientific conventions, symbols and equations to represent quantities, elements and units, such as SI units, symbols of elements in macromolecules, genetic code, formulae of compounds and biochemical equations.
BIO-XII-LO-13	draws conclusions from data collected in activities / experiments / investigatory projects, such as pollen tube growth to ovule, algal bloom and biochemical oxygen demand.
BIO-XII-LO-14	communicates findings and conclusions effectively through discussions and presentations using figures, tables, graphs and digital forms.
BIO-XII-LO-15	applies scientific concepts in daily life and problem solving, such as hygiene during menstruation, organic farming, and coping with plastic and e-waste.
BIO-XII-LO-16	appreciates technological applications and processes in Biology for improved quality of life and sustainable development, such as MOET, resistant plant varieties, tissue culture, microbial fermentation, waste-water treatment, biogas and emission norms.
BIO-XII-LO-17	exhibits creativity in designing models using eco-friendly resources and preparing charts / paintings / sketches, such as water purification systems and electrostatic precipitator.
BIO-XII-LO-18	exhibits ethics and values of honesty, objectivity, rational thinking and freedom from myths/superstitions while taking decisions, such as accurate data recording, correcting myths about STDs, vaccination awareness and ethical arguments for biodiversity conservation.
BIO-XII-LO-19	applies / makes efforts to conserve environment by realising interdependency in biotic and abiotic factors, such as use of weed plants in studies and solid waste management.
BIO-XII-LO-20	calculates using data, such as percentage of pollen germination, population density and productivity.
BIO-XII-LO-21	applies learning to hypothetical situations, such as what will happen if there is no producer as a biotic component on Earth.

A. THEORY BLUEPRINT			
S.No.	Unit / Block	Marks	Details / Scope
1	Unit VI — Reproduction	16	Chapter 1 Sexual Reproduction in Flowering Plants; Chapter 2 Human Reproduction; Chapter 3 Reproductive Health
2	Unit VII — Genetics and Evolution	20	Chapter 4 Principles of Inheritance and Variation; Chapter 5 Molecular Basis of Inheritance; Chapter 6 Evolution
3	Unit VIII — Biology and Human Welfare	12	Chapter 7 Human Health and Disease; Chapter 8 Microbes in Human Welfare
4	Unit IX — Biotechnology and its Applications	12	Chapter 9 Biotechnology: Principles and Processes; Chapter 10 Biotechnology and its Applications
5	Unit X — Ecology and Environment	10	Chapter 11 Organisms and Populations; Chapter 12 Ecosystem; Chapter 13 Biodiversity and Conservation
TOTAL			

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B. QUESTION PAPER DESIGN / BLUEPRINT	
Component / Distribution	Weightage
Demonstrate Knowledge and Understanding	50%
Application of Knowledge / Concepts	30%
Analyse, Evaluate and Create	20%
TOTAL	

C. TYPOLOGY OF QUESTIONS	
Item	Details
Typology	VSA including
Internal Choice	

D. PRACTICAL BLUEPRINT — 30 MARKS			
S.No.	Component	Marks	Details
1	One Major Experiment	5	
2	One Minor Experiment	4	
3	Slide Preparation	5	
4	Spotting	7	
5	Practical Record + Viva Voce	4	
6	Investigatory Project and Project Record + Viva Voce	5	
	TOTAL	30	