HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF SCIENCE

CLASS: XI BIOLOGY

Session – 2026-27

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
JULY	Ch.1 The living world	Biodiversity; Needs for classification; taxonomy and systematic; binomial nomenclature	Constructivist approach Reflective approach	Classroom discussions Question answer session Portfolio	Content, neatness, completeness presentation	Herbarium file	
	Ch.2 Biological classification	Five kingdom classification, salient features and classification of Monera, Protista and Fungi, Lichens ,viruses and viroids	Constructivist approach Reflective approach	Classroom discussions Question answer session Portfolio	Content, neatness, completeness presentation		
	Ch.3 Plant kingdom	Features and classification of plants into major groups (Algae, Bryophyta, Pteridophyta, Gymnosperm	Constructivist approach Reflective approach	Classroom discussions explanation through living specimens of plant, Question answer session Portfolio Lab activity	Concept, Procedure, Presentation		Modules on plant kingdom
	Ch.4 Animal kingdom	Features and classification of animals (non-chordates up to phyla level and chordates up to class level	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio Lab activity	Concept, Procedure, Presentation, performance, analysis		
AUGUST	Ch.5 Morphology of Flowering Plants	Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed, Description of family Solanaceae	Constructivist approach Reflective approach Inquiry based	Classroom discussion, explanation through living specimens of plant (nature walk), project Lab activity	Concept, Research, data collection Presentation performance, analysis		

	Ch.6 Anatomy of flowering plants	Anatomy and functions of tissues system of dicots and monocots.	Reflective approach Inquiry based	Classroom discussion, Question answer session Portfolio Lab activity	Concept, Procedure, Presentation, performance, analysis	floral diagrams and formulae of different families	
	Ch.7 Structural organization in animals	Morphology, anatomy and functions of different systems of Frog	Constructivist approach Reflective approach	Classroom discussion, Question answer session Portfolio	Concept, Procedure, Presentation		
	FIRST PERIODIC ASSESSMENT						
SEPTEMBER	Ch.8 Cell- The unit of life	Cell theory, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall cell organelles- structure and function; endomembrane system, endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, micro bodies; cytoskeleton, cilia, flagella, centrioles, nucleus.	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio Lab Activity	Content, neatness, completeness performance, data collection, analysis		Modules on structure and functioning of cell organelles
	Ch.9 Biomolecules	Biomolecules, structure and function of proteins carbohydrates, lipids, nucleic acids; Enzymes- types, properties, enzyme action.	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio Lab Activity	Concept, Procedure, Presentation, performance, analysis		
	Ch.10 Cell Cycle and Cell Division	Cell cycle, mitosis, meiosis and their significance	Constructivist approach Reflective approach	Classroom discussions, Question answer session	Concept, Procedure, Presentation	Diagrams / 3-D models of stages of cell cycles	
	MID TERM EXAMINATION						
	Ch.11 Photosynthesis in higher plants	Site of photosynthesis, pigments involved in photosynthesis, cyclic and non-cyclic photophosphorylation, hemiosmotichypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio	Content, neatness, completeness		Modules on photophosphorylation

OCTOBER	Ch.12 Respiration in plants	Cellular respiration- glycolysis, fermentation, TCA cycle and electron transport system, Amphibolic pathways, respiratory quotient.	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio	Content, neatness, completeness		
NOVEMBER	Ch.13 Plant-Growth and development	Phages of plant growth, condition of growth, differentiation, dedifferentiation and re differentiation, sequence of developmental processing a plant cell; growth regulators.	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio	Content, neatness, completeness		
	Ch.14 Breathing and Exchange of gases	Respiratory system, mechanism of breathing, exchange of gases, transport of gases & regulation of respiration respiratory disorders	Constructivist approach Reflective approach	Classroom discussions, Question answer session Portfolio	Content, neatness, completeness		
	SECOND PERIODIC ASSESSMENT						
	Ch.15 Body fluid and circulation	Composition of blood, blood group, human circulatory system, regulation of cardiac activity, cardiac disorders.	Constructivist approach Reflective approach	Classroom discussion, Question – Answer session, portfolio	Content, neatness, completeness		Module on functioning of blood circulation
DECEMBER	Ch.16 Excretory products and their Elimination	Modes of excretion human excretory system –structure and functioning, role of other organs in excretion, disorders, Dialysis, Artificial kidney, kidney transplant	Constructivist approach Reflective approach	Classroom discussion, Question – Answer session Sketch Lab activity	Content, neatness completeness performance, analysis	Chart of disorders of different organ systems	
	Ch.17 Locomotion and movement	Types of movement's skeletal muscle-its functioning, skeleton system – structure and function, Disorders of muscular and skeletal system.	Constructivist approach Reflective approach	Classroom discussion, Question – Answer session Sketch	Concept, Procedure, Presentation,		
JANURARY 27	Ch.18 Neural Control and Coordination	Nervous system in humans, generation and conduction of nerve impulse.	Constructivist approach Reflective approach	Classroom discussion, Question – Answer session Sketch	Concept, Procedure, Presentation,		Module on generation and conduction of a nerve impulse

	Ch.19 Chemical coordination and integration	Endocrine glands and hormones, mechanism of hormone action, role of hormones as messengers and regulators, hypo-and hyperactivity and related disorders.	Constructivist approach Reflective approach, Inquiry based	Classroom discussion, Question – Answer session Sketch, assignment	Content, neatness completeness	chart on mechanism role and regulation of hormones (endocrine glands)	
FEB. 27	**Revision**						
	FINAL PRACTICAL EXAMINATION **ANNUAL EXAMINATION**						

SIGNATURE OF HOD _____
[MANISHA MAHENDRA)

SIGNATURE OF PRINCIPAL_____
[ANJU SHARMA]

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF SCIENCE

CLASS: XII BIOLOGY

Session – 2026-27

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	1. Sexual reproduction in flowering plants	Structure of flower, development of male and female gametophytes, pollination-types agencies, pollen-pistilnteraction; double fertilization, post fertilization events, special modes-apomixes, parthenocarpy, polyembriony.	Constructivist , ,Inquiry based, Integrative	Classroom discussion, Question answer session, assignment, Lab activities,	Content, neatness, performance completion		Modules on pre and post fertilization events in plant
	2. Human reproduction	Male and female reproductive system, anatomy of testes and ovary, gametogenesis, menstrual cycle, fertilization, embryogenesis, implantation; pregnancy and placenta formation, parturition.	Constructivist Inquiry based, Integrative	Classroom discussion, Question answer session, Lab activities, assignment	Content, presentation performance completion	Flow charts on hormonal control in human beings	
	3. Reproductive health	Reproductive health and prevention from STDs, birth control; need and methods, contraception and MTP amniocentesis and assisted reproductive technologies.	Constructivist ,Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness completion		

JULY	4. Heredity and variation	Mendelian inheritance, deviation from Mendelism, pleiotropy, chromosome theory of inheritance, sex determination-in human, bird sand honey bee, linkage and crossing over, sex linked inheritance, mendelian disorders.	Constructivist ,Inquiry based, Integrative	Classroom discussion, Question answer session, Lab activities, assignment	Content, neatness, , data collection, analysis	Pedigree charts	Modules on Mendalian disordes
	5. Molecular basis of inheritance	Structure of DNA and RNA, DNA packaging, replication Lac Operon, genom project, DNA fingerprinting	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment Lab activity	Content, neatness, completion performanc e , data collection, analysis		Modules on chromosomal disorders in human beings
AUGUST	6. Evolution	Origin of life, biological evolution and evidences, Darwin's contribution , modern theory of evolution, mechanism of evolution, types of natural selection, gene flow and gene tic drift, Hardy- Weinberg's principle, adaptive radiation, human evolution	Constructivist ,Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion		Module on history of Human Evolution

	7. Human health and diseases	Pathogens; parasites causing human diseases, and their control, basic concepts of immunology-vaccines-cancer HIV and AIDS , adolescence- drug and alcohol abuse.	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion	chart on parasites causing human diseases and their control	
	FIRST PERIODIC ASSESSMENT						
SEPTEMBER	8. Microbes in human welfare	Microbes In household food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers, antibiotics- production and judicious use.	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Lab activities, assignment	Content, neatness, completion		
	9. Biotechnology — Principles and Processes	Genetic engineering(Recombinant DNA technology)	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion		
	10. Biotechnology and its application	Application of biotechnology in health and agriculture, gene therapy, genetically modified organisms-Bt cotton trangenic animals bio safty issues, biopiracy and patents.	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion		Modules on Application of biotechnology

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DEPARTMENT OF SCIENCE

	MID TERM EXAMINATION						
OCTOBER	11. Organisms and populations	Population interactions (mutualism, completion, predation, parasitism) population attributes(growth, birth rate and death rate, age distribution)	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, assignment, lab activity	Content, neatness, completion performance data collection, analysis	Draw different types of population pyramids/ models of age pyramids	
NOVEMBER	12. Ecosystem	Ecosystem; patterns, components, productivity and decomposition; energy flow, pyramids of number, biomass, energy	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion		
	13. Biodiversity and its conservation (continue)	Biodiversity- concept patterns, importance, loss of biodiversity , biodiversity conservation, hotspots, Endangered organisms, extinction, Red Data Book, biosphere reserves, national parks sanctuaries and Ramsar sites.	Constructivist , Inquiry based, Integrative	Classroom discussion, Question answer session, Curriculum activities, assignment	Content, neatness, completion		
DECEMBER	**FIRST PRE BOARD EXAMINATION**						
JAN 27	**SECOND PRE BOARD EXAMINATION** **FINAL PRACTICAL EXAMINATION**						

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FEB & MARCH 27	ANNUAL EXAMINATION

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