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NO.OF PERIODS	TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES	OUTCOME
APRIL / MAY 15 DAYS	**Unit-I** **Reproduction** **Chapters-** **1. Reproduction in organisms** **2. Sexual Reproduction in flowering plants.**	1. Learning about the integrated definition of reproduction , Its types , various modes. 2.Types of asexual reproduction their example based learning and comparison …… 1.Concept of flower development 2.development of male and female gametophytes 3. Pollination-types agencies and example, outbreeding devices. 4.Pollen Pistil interaction. 5. double fertilization 6. Post fertilization events-development of endosperm and embryo. 7. Development of seed and formation of fruit. 8.special modes of reproduction – apomixes, parthenocarpy, polyembryony 9. Significance of seed dispersal and fruit formation.	1. Presentation on various types of asexual modes of reproduction 2. Solve previous years Chapter wise CBSE papers …….. 1. To demonstrate the properties of various flowers pollinated by different agencies such as wind, water, insect etc. 2. To show the development of pollen tube .	• acquire the concept of internal and external fe rtilization. • Concept of seed and fruit formation will be de veloped. • Will acquire the concept of various Vegetative propagation and their types. …… Acquire the knowledge to identify various flowers pollinated by various agencies. Development of special modes of fruit formation and its key concepts. Concept of endosperm formation and its importance.

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JUNE **12 DAYS**	**Chapter-3** **Human Reproduction** …… **Chapter-4** **Reproductive Health** ……	1. Study of Male and female reproductive systems and then role of each part. 2. Microscopic anatomy of testis and ovary. 3. Concept of gametogenesis- spermatogenesis and oogenesis. 4. Menstrual cycle and various events of it. 5. Fertilisation-blastocyst formation, implantation, pregnancy and placenta formation. 6. Concept of parturition , lactation and hormonal changes in the body …… 1. Need for reproductive health and prevention of STDs. 2. Concept of birth control – needs and methods. 3. Concept of contraception and MTPs, Amniocentesis. 4. Methods to cure infertility and assisted reproductive technologies- IVF, ZIFT, GIFT,IUDs. ……..	1. To identify the various parts of testis and ovary with the help of various slides. 2. Concept of blastula formation with the help of various slides. 3. Demonstration of spermatogenesis and oogenesis with the help of a flowchart. 4. Solving chapter wise last year q.p ……. 1. To prepare a project on various ART techniques used in todays generation where there are so many complications regarding pregnancy. 2. Solving of last year chapter wise q.p . …… 1.	O • Students will be able to understand the concept of spermatogenesis and oogenesis and various hormonal changes occurring during it. • Will know the various stages of implantation and its affect on uterus. • Role of placenta and placental hormones during pregnancy. …… Students will be aware of various methods which are developed to combat infertility. Use of contaceptions and their effect on body ……

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	Unit- II **Genetics and Evolution** **……..** **Chapter- 5** **Principles of inheritance and variations**	…… 5. Concept building of mendelian Inheritance,. 6. Deviations from Mendelism- Incomplete dominance, Co-Dominance, multiple alleles. 7. Concept building about various blood groups and their inheritance. 8. Concept of pleiotropy and polygenic inheritance. 9. Chromosomal theory of inheritance. 10. Sex determination in- Humans, Birds and honey bees. 11. Concept of linkage and crossing over. 12. Sex linked inheritance- Haemophilia, colour Blindness. 13. Chromosomal and Mendelian disorders in Humans.	……. 2. To find out the differences between mendelian and chromosomal disorders . 3. To find out diseases with pedigree analysis charts 4. Comaparison of various mendelian traits.	…… 1. Concept building on mendelian genetics. 2. Various attributes of mendelian and chromosomal disorders. 3. Blood groups and their role in various organisms. 4. Role of mutation and its affect can be studied. 5. Family diseases can be studied with the help of pedigree analysis chart.

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JULY **25 da ys**	**Chapter – 6 Molecular basis of inheritance** **.....** **Chapter -7 Evolution**	1. Search for genetic material and DNA and RNA . 2. Structure of DNA and RNA 3. DNA replication and packaging. 4. Central Dogma. 5. Transcription 6. Genetic code 7. Translation 8. Gene expression and regulation-lac operon. 9. Genome and Human and rice genome projects 10. DNA fingerprinting. …… 1. Concept of origin of life 2. Biological evolution and and its evidences . 3. Darwin's contribution with respect to modern synthetic theory of evolution. 4. Concept of natural selection and its types. 5. Gene flow and genetic drift. 6. Hardy weinberg's principle its application. 7. Adaptive radiation and human evolution. ……..	1. To prepare a chart on salient features of DNA. 2. Prepare a chart on various contrasting feature on eukaryotic and prokaryotic transcription and packaging. 3. To prepare a sequence of DNA fingerprinting and its techniques. …… 1. To summarise various theories of evolution on a chart. 2. To Show the differences between homologous and analogous organs. 3. To demonstrate the differences between mendelian and Darwinian theories of evolution. ……	. 1. Concept of DNA and its structure is developed. 2. DNA packaging and its applications. 3. Genetic code and its relation with protein synthesis. …… 1. Concept building on various theories of evolution 2. Knowledge about evolution ,its patterns and evidences of evolution 3. Strategies of hardy Weinberg principle. 4. Deviations from Hardy Weinberg principle. 5. Knowledge of evolution of plants and animals.

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26	**Chapter-8** **Human Health and diseases**	1. Concept of diseases and and their causative agents. 2. Common communicable diseases their causes ,symptoms and cure. 3. Basic concepts of immunology – vaccines. 4. Concept of HIV and AIDS. 5. Adolescence –drug and alcohol abuse.	1. To make a chart on various diseases. 2. To make a ppt on various awareness program on malaria 3. To describe the process of allergy and its solution. 4. To make a project on HIV and cancer.	1. Knowledge of how diseases are spread will be developed. 2. Concept of personal hygiene and its importance will be developed. 3. Drugs and misuse will be administered.
AUGUST **23 days**	**Chapter- 9** **Strategies for enhancement of food production.** **…….** **Chapter-10** **Microbes in human welfare**	1. Concept of Plant breeding techniques. 2. Tissue culture process and importance. 3. Single cell protein ,its use and affect. 4. Biofortification and its advantages 5. Apiculture and animal husbandry. ..... 1. Importance of microbes in everyday life. 2. Importance in agricultural production. 3. Sewage treatment and energy generation.. 4. Role of microbes as biocontrol agents and biofertilisers. 5. Production of antibiotics and its judicious use.	CBSE Sample papers Worksheets To prepare a project on tissue culture and its various attributes **…….** Make a project on various useful microbes. Worksheets Sample papers	1. Different strategies of food production will be known 2. Strategies for food production and hybridization 3. Importance of animal husbandry. …… Students will be able to- Know the importance of microbes in day to day life. Role of antibiotics, its use and its manufacture. Role of microbes an biocontrol agents.

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SEPTEMBER 22 days	**Revision of Class XII** Revision	Revision	More exercises from Sample papers and CBSE past papers	• the learner will by now honed the skills and habit of recapitulation. • Plan a revision course for better implementation of lessons learnt • Develop a confidence in approaching Examination
OCTOBER 18 days	**Chapter-11 Biotechnology : Principles and processes** **…….** **Chapter-12 Biotechnology and its application**	1. Introduction to the concept of biotechnology and its applications. 2. Principles and processes. 3. Method of genetic engineering 4. Formation of rDNA. ……. 1. Concept of human insulin and vaccine production. 2. Stem cell technology 3. Gene Therapy 4. Genetically modified organisms-Bt crops, Transgenic animals. 5. Biosafety issues 6. Biopiracy and patents.	To Prepare a project on recombinant DNA technology Solve last year sample papers …….. To prepare a project on artificial insulin production by Eli lily technology. To make a chart on various GMOs both plants and animals. CBSE sample papers worksheets	The students will be able to – Know the concept of biotechnology and its applications. How this can be used in different methodologies Formation and implications of rDNA. …… The students will be able to understand the concept of gene therapy and its applications in various diseases The use of various GMOs and their benefit to organisms.

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NOVEMBER 20 days	**Chapter-13** **Organisms and populations.** **.....** **Chapter-14** **Ecosystem** **…….**	1. Concept of habitat and niche. 2. Populations and ecological adaptations (types) 3. Population interactions- Mutualism, competitions, predation,parasitism. 4. Population attributes- growth ,birth rate,death rate,age distribution. ..... 1. Concept of ecosystem- Patterns and components. 2. Productivity and decomposition 3. Concept of energy flow. 4. Ecological pyramids-no., energy and biomass. 5. Types of nutrient cycling –carbon and phosphorus. 6. Ecological succession- Hydrarch and xerarch. 7. Ecological services- carbon fixation, pollination, seed dispersal. ……	To prepare a project on various population interactions To calculate the population density using quadrant method. Worksheet CBSE sample papers …….. To prepare a model on energy transmission through various ecosystems. Explanation of various pyramids diagrammatically. CBSE sample paper Worksheets …….	The students will be able to- Relate the various kinds of population interactions Population characteristics and its estimation will be known. Concept of habitat and niche will be broadened. …… The students will be able to understand- The concept of primary and secondary productivity will be developed. Ecological succession and its application Nutrient cycling and its impact on environment. Energy flow and its estimation via 10% law. ……

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	Chapter-15 Biodiversity and its conservation	1. Concept of biodiversity 2. Importance of biodiversity 3. Loss of biodiversity; reasons and solutions. 4. Conservation of biodiversity. 5. Biodiversity hotspots. 6. Concept of endangered ,extinct and vulnerable organisms 7. Red data book 8. Ex-situ and in –situ conservation	Sample worksheets CBSE sample papers. Make a project on various ex situ and in situ conservation strategies.	The students will be able to- Differentiate between various conservation strategies. Knowledge of red data book will be enhanced. Identification of biodiversity hot spots
DECEMBER 19 days	**Chapter-16** **Environmental issues**	1. Pollution and its types. 2. Methods and control of pollution. 3. Agrochemicals and their effects. 4. Solid waste management 5. Radioactive waste management. 6. Green house effect and climate change 7. Ozone layer depletion 8. Reasons of deforestation and solution. 9. Case study as success story addressing environmental issues.	Sample Papers Worksheets	The students will be able to- Know the various kinds of wastes and their modes of disposal. Green house affect and its impact. Management of radioactive wastes.
JANUARY/ FEB 20 days	**REVISION**	**REVISION**		
MARCH		**REVISION AND EXAMS**		