| VSR GOVERNMENT DEGREE AND PG COLLEGE MOVVA | |
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| DEPARTMENT OF BOTANY | |
| | **I SEMESTER** |
| | **Fundamentals of Microbes and Non-vascular Plants-1003BOT20** |
| CO1 | Explain origin of life on the earth, |
| CO2 | Illustrate diversity among the viruses and prokaryotic organisms and can categorize |
| CO3 | Classify fungi, lichens, algaeand bryophytes based on theirstructure, reproduction and life cycles |
| CO4 | Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi. |
| CO5 | Recall and explain theevolutionary trends among amphibians of plant kingdom for their shift to land habitatEvaluate the ecological and economic value of microbes, thallophytes and bryophytes. |
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| | **II SEMESTER** |
| | **Basics of Vascular plants and Phytogeography-2003B0T20** |
| CO1 | Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles. |
| CO2 | Justifyevolutionary trends in tracheophytes to adapt for land habitat. Explain the process of fossilization and compare the characteristics of extinct and extant plants. |
| CO3 | Critically understand various taxonomical aids for identification of Angiosperms. Analyze the morphology of the most common Angiospermplantsof their localities and recognize their families. |
| CO4 | Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare |
| CO5 | Locate different phytogeographical regions of the world and India and can analyze their floristic wealth. |
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| | **III SEMESTER** |
| | **Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity-3003BOT20** |
| CO1 | Understand on the organization of tissuesand tissue systems in plants. Illustrate and interpret various aspects of embryology |
| CO2 | Discuss the basic concepts of plant ecology, andevaluate the effects of environmental and biotic factors on plant communities. |
| CO3 | Appraise various qualitative and quantitative parameters to study the population and community ecology. |
| CO4 | Correlate theimportance of biodiversity and consequences due to its loss. |
| CO5 | Enlistthe endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation. |

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| | **IV SEMESTER** |
| | **Plant Physiology and Metabolism-4003BOT20** |
| CO1 | Comprehendthe importance of water in plant life and mechanisms for transport of water and solutes in plants |
| CO2 | Evaluate the role of minerals in plant nutrition and their deficiency symptoms. Interpret the role of enzymes in plant metabolism |
| CO3 | Critically understand the light reactions and carbon assimilation processes responsible for synthesis of foodin plants. |
| CO4 | Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms. Evaluate the physiological factors that regulategrowth and development in plants. |
| CO5 | Examine the role of light on flowering and explain physiology of plants under stress conditions |
| | **IV SEMESTER ,Cell Biology, Genetics and Plant Breeding-4003BOT-B** |
| CO1 | Distinguish prokaryotic and eukaryotic cells and design the model of a cell. Explain the organization of a eukaryotic chromosomeand the structure of genetic material. |
| CO2 | Demonstrate techniques to observe the cell and its componentsunder a microscope. |
| CO3 | Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings. |
| CO4 | Elucidate the role of extra-chromosomal genetic material for inheritance of characters.Evaluate the structure, function and regulation of genetic material. |
| CO5 | Understand the application of principles and modern techniques inplant breeding.Explain the procedures of selection and hybridization for improvement of crops. |
| | **VI SEMESTER** |
| | **Plant Tissue Culture-6003BOT20-C1** |
| CO1 | Comprehend the basic knowledge and applications of plant tissue culture. |
| CO2 | Identify various facilities required to set up a plant tissue culture laboratory. |
| CO3 | Acquire a critical knowledge on sterilization techniques related to plant tissue culture. |
| CO4 | Demonstrate skills of callus culture through hands on experience |
| CO5 | Understand the biotransformation technique for production of secondary metabolites. |
| | **VI SEMESTER ,Mushroom Cultivation-6003BOT20-C2** |
| CO1 | Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms. |
| CO2 | Identify the basic infrastructure to establish a mushroom culture unit. |
| CO3 | Demonstrate skills preparation of compost and spawn. |
| CO4 | Acquire a critical knowledge on cultivation of some edible mushrooms. |
| CO5 | Explain the methods of storage, preparation of value-added products and marketing. |