

EVOLUTION

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
			Hrs/ week	Total Hours/ Semester	Hrs/ week	Total Hours/ Semester		
VI	21CZO6C	Core-X	4	60	4	60	Nil	4

COURSE OBJECTIVES:

- To make the students aware of how organic evolution occurred and how the various life forms come into existence.
- To comprehend the scientific concepts of animal evolution through theories and evidences

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Students will be able to describe the history and development of evolution	K2, K3
CO2	students will understand the significance of natural selection in evolution	K2, K3
CO3	Students will apply their knowledge on how new species are evolved through isolating mechanism.	K3, K4
CO4	students will get an awareness about the historical periods during the evolution of earth and status of fauna during the particular age.	K2, K3
CO5	Students will have the knowledge of the evolution of various vertebrate forms	K3, K4

Knowledge Level: K1- Remember; K2 – Understand; K3 – Apply; K4 – Analyze.

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	S	S	S	M	M
CO3	M	S	S	S	S
CO4	S	S	S	S	S
CO5	S	M	S	S	S

S- Strong; M – Medium; L- Low

Distribution of Marks: Theory 100% and Problems Nil %

UNIT I

EVIDENCES OF EVOLUTION

(12 Hours)

Origin of life: Theory of Spontaneous generation-Abiogenesis, Biogenesis, Cosmic theory, Biochemical origin of life-Urey-Miller experiment. Evidences of evolution: Morphological and Anatomical, Embryological, Physiological and Biochemical and paleontological.

UNIT II

THEORIES OF ORGANIC EVOLUTION

(12 Hours)

Lamarckism, Neo Lamarckism, Natural selection-Darwinism, NeoDarwinism. De Vries concept of Mutation. Synthetic theory of evolution- Hardy Weinberg Equilibrium, Genetic Drift.

UNIT III:

ADAPTATION and ISOLATION

(12 Hours)

Adaptation –Colouration and Mimicry (types and significance) – Batesian and Mullerian Non adaptive traits – Neotonyand Significance. Isolation- Pre-zygotic and Post-zygotic isolating mechanism and Speciation-Allopatric, Peripatric, Parapatric and Sympatric. Basic outlines of Molecular evolution.

UNIT IV:

ANIMAL DISTRIBUTION

(12 Hours)

Zoogeographical regions – Palearctic, Nearctic, Neotropical, Oriental, Australian and Ethiopian regions - their Climatic and faunal peculiarities. Wallace line, Patterns of distribution. Geological time scale- Azoic, Archaeozoic, Proterozoic, Palaeozoic, Mesozoic, Cenozoic era.

UNIT V :

EVOLUTION OF HIGHER FORMS

(12 Hours)

Evolutionary significance of Dipnoi, Amphibia – Golden age of Reptiles - Major types of Dinosaurs and reason for extinction, Affinities of Archaeopteryx, Evolution of Man - Biological and cultural.

TEXT BOOKS

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1	Verma PS, and Agarwal VK	Cell Biology, Genetics, Evolution and Ecology,	S.Chand Publishers, New Delhi.	2008
2	Arumugam N	Organic Evolution	Saras Publication, Nagercoil	2015

3	Veer Bala Rastogi	Organic Evolution	Meerut Publications	1995
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REFERENCE BOOKS:

S. No.	Authors	Title of the Book	Publishers	Year of Publication
1.	Gupta PK,	Cytology, Genetics and Evolution	Rastogi Publications, Meerut	2005
2.	Barton NH, Briggs DEG, Eisen JA, Goldstein DB and Patel NH	Evolution	Cold Spring, Harbour Laboratory Press	2007
3.	Hall BK and Hallgrimsson B,	Evolution,	Jones and Bartlett Publishers	2007
4.	Agarwal, V.K and Usha Gupta	Evolution and animal distribution	S.Chand and Co	2005
5.	Dodson, E.O	Evolution	Reinhold, Newyork	1990.
6.	Gopalakrishnan. T.S. Itta Sambasivaiah and A.P.Kamalakara Rao	Principles of organic Evolution	Himalaya publishing house	2004
7.	T.K.Ranganathan	Organic Evolution	Rainbow Printers, Palayankottai	1994
8.	<u>Richard Swann Lull</u>	Organic Evolution-A Text-book	University of Michigan	2007

WEB SOURCES:

www.sciencedirect.co.
www.pebmed.com
www.khansacademy.com
www.epatsala.com
www.swayam.com

TEACHING METHODOLOGY

- Class room teaching
- Charts/ Models
- Power point Presentations
- Discussions
- Assignments
- Home test

SYLLABUS DESIGNERS

- Dr. D. Sasikala, Assistant Professor and HOD
- Dr. V. Kiruthiga, Assistant Professor
- Dr. V. Rekha, Assistant Professor
- Dr. A. Vinodhini, Assistant Professor
- Dr. G. Vidhya, Assistant Professor