FACULTY OF LIFE SCIENCES

SYLLABUS

For

Bachelor of Science (Biotechnology) Semester IV (Under Continuous Based Evaluation System) (12+3 System of Education)

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The Heritage Institution

KANYA MAHA VIDYALAYA JALANDHAR (Autonomous)

Session: 2023-24

KANYA MAHAVIDYALAYA, JALANDHAR (AUTONOMOUS)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAM Session-2023-24

Bachelor of Science (Bio-Technology) Semester IV									
Course Name	Pogram Name	Course Code	Course Type	Marks				Exami	
				Total	Paper	Ext.		-	nation
						L	Р	CA	(in Hours)
Zoology II	B.Sc. (Biotechnology)	BBTM-4486	С	60	Zoology II (Theory)	30	-	12	3
		BBTM-4486 (P)			Zoology II (Practical)	-	18		3

Bachelor of Science (Bio-Technology) Semester-IV Session: 2023-24 Course Code: BBTM-4484 Course Title: Zoology-II (Theory)

Course Outcomes

After passing this course the student will be able to:

- > CO1 Understand evolution of Prokaryotes and Eukaryotes.
- > CO2 Understand the process and theories in evolutionary biology.
- CO3 Aware the students about various pathogenic protozoans and helminths and diseases caused by them in humans.
- > CO4 Understand diseases caused by arthropod vectors and their control measures.

Bachelor of Science (Bio-Technology) Semester-IV Session: 2023-24 Course Code: BBTM-4484 Course Title: Zoology-II (Theory)

Time: 3 Hrs.

Max. Marks: 60 Theory: 30 Practical: 12 CA: 18

Instructions for the Paper Setters:

Eight questions of equal marks (6 marks each) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Unit-1

Origin of Life on Earth: Origin of earth and primitive earth conditions, Theories of origin of life (Theory of Extraterrestrial contact- Import of life through meteorites, Special creation theory, Oparin Haldane Theory, Abiogenesis, Evidences against theory of spontaneous generation of life, Biogenesis, Theory of chemical evolution, Miller & Urey Experiment).

Evolution of Prokaryotes and Eukaryotes (unicellularity to multicellularity).

Unit-2

Evolution: Definition, Scope and History, Theories of Evolution (Lamarckism, Darwinism, Hugo de Vries and Modern theory of Evolution).

Geological time scale.

Unit-3

Introduction to Parasitology (pertaining to various terminologies in use). Brief account of Life history, mode of infection and pathogenicity of the following pathogens with reference to man, prophylaxis and treatment. **Pathogenic Protozoans:** Entamoeba, Trypanosoma, Giardia and Plasmodium. **Pathogenic Helminths:** Tape Worm, Ascaris and Ancylostoma.

Unit-4

Arthropod vectors of human diseases: Malaria, Yellow fever, Dengue haemorragic fever, Filariasis, Plague and Epidemic typhus.

Distribution and control of the above mentioned vectors.

Books:

- 1. Sobti, R.C. & Nigam, S.K. (2002). Structural & function biology of chordates, Vishal Publishers, Jalandhar.
- Sobti, R.C. & Sharma, V.L. (2005). Basics of Biotechnology: Introduction of Life Sciences. Vishal Publishers, Jalandhar.
- Sobti, R.C. (2005). Introduction to Biotechnology, Part-2, Concepts Tools and Application, Vishal Publishers.

Bachelor of Science (Bio-Technology) Semester-IV Session: 2023-24 Course Code: BBTM-4484 (P) Course Title: Zoology-II (Practical)

Course outcomes

After passing this course the student will be able to:

- CO1 Aware the students for various parasites and diseases which spreads in human with the help of study of host-parasite relationship.
- ➢ CO2 Aware about the typhoid, cholera likes disease.
- > CO3 Understand the evolutionary phenomena.

Bachelor of Science (Bio-Technology) Semester-IV Session: 2023-24 Course Code: BBTM-4484 (P) Couse Title: Zoology-II (Practical)

Time: 3 Hrs.

Max. Marks: 12

Note. The question paper will be set by the examiner based on the syllabus.

1. Study of Evolutionary phenomenon with the help of charts / models /videos:

Homology, Analogy and Mimicry.

- 2. Study of the skeleton of human.
- 3. Study of the following prepared slides: histology of man (compound tissues).
- 4. Study of following prepared slides/specimen:

Pathogenic Protozoans: Entamoeba, Trypanosoma, Giardia and Plasmodium.

Pathogenic Helminths: Tape Worm, Ascaris and Ancylostoma.

Arthropod vectors of human diseases: Anopheles, Culex, Aedes Mosquitoes, Rat flea.

Books:

- 1. Sobti, R.C. & Nigam, S.K. (2002). Structural & function biology of chordates, Vishal Publishers, Jalandhar.
- 2. Sobti, R.C. & Sharma, V.L. (2005). Basics of Biotechnology: Introduction of Life Sciences. Vishal Publishers, Jalandhar.
- 3. Sobti, R.C. (2005). Introduction to Biotechnology, Part-2, Concepts Tools and Application, Vishal Publishers.