FACULTY OF LIFE SCIENCES

Syllabus for

Bachelor of Science (Medical/Honours)

(SEMESTER I-II)

(Under Credit Based Continuous Evaluation Grading System)

Session: 2024-25

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

The Heritage Institution

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Programme Specific Outcomes:

Upon successful completion of this course, students will be able to:

PSO1. Acquire knowledge on basic, important concepts in the field of biology such as diversity, physiology, Evolution, Genetics, Developmental Biology and Comparative Anatomy and can be applied to various fields of Biotechnology.

PSO 2. Describe the diversity, ecological and evolutionary importance of animal life ranging from the single celled protozoan to the highly complex vertebrates. They will also learn to describe the various aspects of morphology, physiology and embryology in nonchordate and chordate life forms.

PSO3. Apply appropriate techniques and modern instruments for animal physiology, biochemical estimations, cellular activities of animals and other medical laboratory technologies with an understanding of the application.

PSO4. Acquaint the students about the Botany, importance of nature, classification, morphology, biology, structure, life cycle and economic importance of microorganisms and Plants.

PSO5. Understand Botanical Nomenclature, Classification, plant diversity, conservation, phylogenetic, relationships and development.

PSO6. Understand role of plant sciences in the pursuit of many applied sciences like Agriculture, Horticulture, Sericulture, Forestry, Biotechnology and many more.

PSO7. Demonstrate knowledge to help acquire, articulate, retain, and employ practical skills relevant to Food Chemistry and Nutrition, Food Plant Hygiene and Sanitation, Food Processing and Packaging, Quality Assurance, Food analysis, Food Plant Layout and Management. Students will demonstrate engagement in the Food Science discipline through involvement in research or internship activities.

PSO8. Demonstrate knowledge to help acquire, articulate, retain, and employ practical skills relevant to Fundamentals of Microbiology, Basics of Food Microbiology, Microbial Nutrition and Metabolism, Microbial Ecology, Applied Microbiology. Students will demonstrate engagement in the Microbiology discipline through involvement in research or internship activities.

PSO9. Demonstrate knowledge of chemistry and apply this knowledge toanalyse a variety of chemical phenomena and will be able to interpret and analyse quantitative data.

PSO10. Understand theoretical concepts of instruments that are commonly used in most chemistry fields as well as interpret and use data generated in instrumental physical and chemical analyses.

PSO11. To train students in multidisciplinary and interdisciplinary areas in chemical sciences.

They will also be able to employ critical thinking and scientific inquiry in the performance, design, interpretation and documentation of laboratory experiments, at a level suitable to succeed at an entry-level position in industry or a chemistry postgraduate program.

Kanya Maha Vidyalaya, Jalandhar (*Autonomous*)

SCHEME AND CURRICULLUM OF EXAMINATIONS OF FOUR-YEAR DEGREE PROGRAM

Bachelor of Science (Medical)/Honours

Session 2024-2025

B.Sc (Medical) Semester I								
Course Code	**Course Name**	**Course Type**	**Credits**	**Total Marks**	**Ext.**		**CA**	**Examination Time (in Hours)**
					L	**P**		
BSML-1421 BSML-1031 BSML-1431	**Punjabi (Compulsory)** **[1]Basic Punjabi** **[2]Punjab History and Culture**	C	4	100	70	-	30	3
BSML-1212	**English Language Skills-1**	AEC	4	100	70		30	3
BSML-1483	**Zoology (Diversity of Nonchordates- I) (Protozoa - Annelida)**	DSC	4	100	70		30	3
BSMP-1483	**Nonchordates- I Lab**		2	50	--	35	15	3
BSML-1084	**Chemistry (Inorganic Chemistry-I: Atomic Structure and Periodic Table)**	DSC	4	100	70		30	3
BSMP-1084	**Inorganic Chemistry-I: Lab Qualitative Analysis**		2	50	--	35	15	3
BSML-1075	**Botany (Diversity of Cryptogams)**	DSC	4	100	70		30	3
BSMP-1075	**Diversity of Cryptogams Lab**		2	50	--	35	15	3
*VACF-1491	**Foundation Course**	VAC	2	50	35		15	1

[1]Special paper in lieu of Punjabi (Compulsory) for those who have not studied Punjabi upto 8th-10th Class.

[2]Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

***Credits grade points of these courses will not be added in SGPA/CGPA of the semester Program and only grades will be provided.**

C-Compulsory

AEC- Ability Enhancement Compulsory Course, DSC- Discipline Specific Course,

VAC- Value Added Course

Kanya Maha Vidyalaya, Jalandhar (*Autonomous*)

SCHEME AND CURRICULLUM OF EXAMINATIONS OF FOUR-YEAR DEGREE PROGRAM

Bachelor of Science (Medical/Honours)

Session 2024-2025

B.Sc. (Medical) Semester II								
Course Code	**Course Name**	**Course Type**	**Credits**	**Total Marks**	**Ext.**		**CA**	**Examination Time (in Hours)**
					L	**P**		
BSML-2421 BSML-2031 BSML-2431	**Punjabi (Compulsory)** **[1]Basic Punjabi** **[2]Punjab History and Culture**	C	4	100	70	-	30	3
BSML-2212	**English Language And Literature-1**	MDC	4	100	70		30	3
BSML- 2483	**Zoology (Diversity of Nonchordates- II) (Arthropoda - Hemichordata)**	DSC	4	100	70		30	3
BSMP-2483	**Nonchordates- II Lab**		2	50	--	35	15	3
BSML-2084	**Chemistry (Organic Chemistry-I: Hydrocarbons and alkyl Halides)**	DSC	4	100	70		30	3
BSMP-2084	**Organic Chemistry-I: Lab Functional group analysis**		2	50	--	35	15	3
BSML-2075	**Botany (Cell Biology and Genetics)**	DSC	4	100	70		30	3
BSMP-2075	**Cell Biology and Genetics Lab**		2	50	--	35	15	3
BSMM-2080/ BSMM -2480/ BSMM -2070	**Chemistry/ Aquaculture/ Medicinal Botany**	SEC	3	100	50	20	30	3+3
VACD- 2161	***Drug Abuse: Problem, Management and Prevention (Compulsory)**	**VAC**	2	50	35	--	15	3

[1]Special paper in lieu of Punjabi (Compulsory) for those who have not studied Punjabi upto 8th-10th Class.

[2]Special paper in lieu of Punjabi (Compulsory) for those students who are not domicile of Punjab.

***Credits grade points of these courses will not be added in SGPA/CGPA of the semester Program and only grades will be provided.**

**** Student can opt any one of the given courses.**

C-Compulsory

MDC- Multidisciplinary Course

DSC- Discipline Specific Course

SEC- Skill Enhancement Course

VAC- Value Added Course

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

PUNJABI (COMPULSORY)
Course Code: BBML-1421

Course Outcomes:

CO1 : 'ਦੋ ਰੰਗ'(ਕਵਿਤਾ ਭਾਗ) ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਵਿਤਾ ਪ੍ਰਤੀ ਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਤਾਂ ਕਿ ਉਹ ਆਧੁਨਿਕ ਦੌਰ ਵਿਚ ਚੱਲ ਰਹੀਆਂ ਕਾਵਿ ਧਾਰਾਵਾਂ ਅਤੇ ਕਵੀਆਂ ਬਾਰੇ ਗਿਆਨ ਹਾਸਿਲ ਕਰ ਸਕਣ।ਇਸ ਦਾ ਹੋਰ ਮਨੋਰਥ ਕਵਿਤਾ ਦੀ ਵਿਆਖਿਆ, ਵਿਸ਼ਲੇਸ਼ਣ ਤੇ ਮੁਲੰਕਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ ਵੀ ਹੈ ਤਾਂ ਕਿ ਉਹ ਸਮਕਾਲੀ ਸਮਾਜ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝ ਸਕਣ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਦ੍ਰਿਸ਼ਟੀ ਬਣਾ ਸਕਣ।

CO2: 'ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿਧ ਹਸਤੀਆਂ' ਜੀਵਨੀ ਦੀ ਵਿਧਾ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਜੀਵਨੀ ਨੂੰ ਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਜੀਵਨੀ ਜਗਤ ਨਾਲ ਜੋੜਣਾ ਹੈ।

CO3: ਪੈਰ੍ਹਾ ਰਚਨਾ ਅਤੇ ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉਤਰ ਦੇਣ ਦਾ ਮਨਰੋਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

CO4: ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ: ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ੍ਭਾਸ਼ਾ ਵਿਚ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ੍ਹ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ ਪੜ੍ਹਣ ਨਾਲ ਵਿਦਿਆਰਥੀ ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ ਤੋਂ ਵਾਕਫ਼ ਹੋਣਗੇ।

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

PUNJABI (COMPULSORY)
Course Code: BBML-1421

ਸਮਾਂ : 3 ਘੰਟੇ **Maximum Marks: 100**
Credits (L-T-P) **Theory: 70**
4-0-0 **CA: 30**

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. **ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।**

2. **ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।**

3. **ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 14 ਅੰਕ ਹਨ।**

4. **ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।**

ਪਾਠਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਯੂਨਿਟ-I

ਦੋ ਰੰਗ (ਕਵਿਤਾ ਭਾਗ) (ਸੰਪਾ.ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ), ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।

(ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ /ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ/**ਸਾਰ**) **14 ਅੰਕ**

ਯੂਨਿਟ-II

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ (ਜੀਵਨੀ ਨੰ: 1 ਤੋਂ 9 ਤੱਕ)
(ਸੰਪਾ.ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ, ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਨ),ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।

(ਵਿਸ਼ਾ-ਵਸਤੂ/ **ਨਾਇਕ ਬਿੰਬ/ ਸਾਰ**) **14 ਅੰਕ**

ਯੂਨਿਟ-III

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ (ਤਿੰਨ ਵਿਚੋਂ ਇੱਕ)
(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ। **14 ਅੰਕ**

ਯੂਨਿਟ-IV

(ੳ) ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ : ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ੍ਭਾਸ਼ਾ ਵਿਚ ਅੰਤਰ,ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ੍ਚਿੰਨ੍ਹ।
(ਅ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ **14 ਅੰਕ**

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BASIC PUNJABI
In lieu of Punjabi (Compulsory)
Course Code: BBML -1031

Course Outcomes:

CO1:ਮੁੱਢਲੀ ਪੰਜਾਬੀ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨੂੰ ਸਿਖਾਉਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਵਿਚ ਪਾ ਕੇ ਇਕ ਹੋਰ ਭਾਸ਼ਾ ਸਿੱਖਣ ਦਾ ਮੌਕਾ ਪ੍ਰਦਾਨ ਕਰਨਾ ਹੈ। ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੈਂਤੀ ਅੱਖਰੀ, ਅੱਖਰ ਕ੍ਰਮ, ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ ਅਤੇ ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ ਅਤੇ ਮਾਤਰਾਵਾਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ) ਲਗਾਖ਼ਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਤੋਂ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

CO2: ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ ਦੀ ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ (ਸਾਧਾਰਨ ਸ਼ਬਦ, ਸੰਯੁਕਤ ਸ਼ਬਦ, ਮਿਸ਼ਰਤ ਸ਼ਬਦ,ਮੂਲ ਸ਼ਬਦ,ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ) ਤੋਂ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

CO3: ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਰਿਸ਼ਤੇਨਾਤੇ, ਖੇਤੀ ਅਤੇ ਹੋਰ ਧੰਦਿਆਂ ਆਦਿ ਤੋਂ ਜਾਣੂ ਕਰਵਾਇਆ ਜਾਵੇਗਾ।

CO4: ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿਚ ਹਫ਼ਤੇ ਦੇ ਸੱਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇਕ ਤੋਂ ਸੌ ਤੱਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ ਸਿਖਾਉਣਾ ਹੈ।

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BASIC PUNJABI
In lieu of Punjabi (Compulsory)
Course Code: BBML -1031

ਸਮਾਂ : 3 ਘੰਟੇ **Maximum Marks: 100**

Credits (L-T-P) **Theory: 70**
4-0-0 **CA: 30**

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।
2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।
3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 14 ਅੰਕ ਹਨ।
4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠਕ੍ਰਮ

ਯੂਨਿਟ-I

ਪੈਂਤੀ ਅੱਖਰੀ, ਅੱਖਰ ਕ੍ਰਮ, ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਣ ਅਤੇ ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਣ ਅਤੇ ਮਾਤ੍ਰਵਾਂ (ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ) ਲਗਾਖ਼ਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ): ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ। 14 ਅੰਕ

ਯੂਨਿਟ-II

ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ : ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ (ਸਾਧਾਰਨ ਸ਼ਬਦ, ਸੰਯੁਕਤ ਸ਼ਬਦ, ਮਿਸ਼ਰਤ ਸ਼ਬਦ, ਮੂਲ ਸ਼ਬਦ, ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ)। 14ਅੰਕ

ਯੂਨਿਟ-III

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ : ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਰਿਸ਼ਤੇ ਨਾਤੇ, ਖੇਤੀ ਅਤੇ ਹੋਰ ਧੰਦਿਆਂ ਆਦਿ ਨਾਲ ਸੰਬੰਧਤ। 14 ਅੰਕ

ਯੂਨਿਟ-IV

ਹਫ਼ਤੇ ਦੇ ਸੱਤ ਦਿਨਾਂ ਦੇ ਨਾਂ, ਬਾਰ੍ਹਾਂ ਮਹੀਨਿਆਂ ਦੇ ਨਾਂ, ਰੁੱਤਾਂ ਦੇ ਨਾਂ, ਇਕ ਤੋਂ ਸੌ ਤਕ ਗਿਣਤੀ ਸ਼ਬਦਾਂ ਵਿਚ। 14 ਅੰਕ

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Punjab History and Culture (From Earliest Times to C 320)
(Special paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)
Course Code: BSML-1431

Course Outcomes:

After completing Semester I and course on Punjab History and Culture students of History will be able to identify and have a complete grasp on the sources and writings of Ancient Indian History of Punjab

CO1: Identify and understand the sources and physical features of Punjab

CO 2: To study the earliest civilisation (Indus Valley Civilization) and original home of Aryans

CO 3: To examine the Social, Religious and Economic life during Early and Later Vedic Age

CO 4: To comprehend the Buddhist, Jain and Hindu faith and their relevance in the modern time

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Punjab History and Culture (From Earliest Times to C 320)
(Special paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)
Course Code: BSML-1431

Examination Time: 3 Hours — Max. Marks: 100
Credits L-T-P: 4-0-0 — Theory: 70
Contact Hours: 4 Hrs/Week — CA: 30

Instructions for the Paper Setter:

1. Question paper shall consist of four Units
2. Examiner shall set 8 questions in all by selecting Two Questions of equal marks from each Unit.
3. Candidates shall attempt 5 questions in 1000 words, by at least selecting One Question from each Unit and the 5^{th} question may be attempted from any of the four Units.
4. Each question will carry 14 marks

Unit-I

1. Physical features of the Punjab
2. Sources of the ancient history of Punjab

Unit-II

3. Harappan Civilization: social, economic and religious life of the Indus Valley People.
4. The Indo-Aryans: Original home

Unit-III

5. Social, Religious and Economic life during Early Vedic Age.
6. Social, Religious and Economic life during Later Vedic Age.

UNIT-IV

7. Teachings of Buddhism
8. Teachings of Jainism

Suggested Readings

- B.N. Sharma, Life in Northern India, Delhi. 1966.
- Budha Parkash, Glimpses of Ancient Punjab, Patiala, 1983.
- Chopra, P.N., Puri, B.N., and Das,M.N.(1974). A Social, Cultural and Economic History of India, Vol. I, New Delhi: Macmillan India.

- L. M Joshi (ed.), History and Culture of the Punjab, Art-I, Patiala, 1989 (3rd edition)
- L.M. Joshi and Fauja Singh (ed.), History of Punjab, Vol. I, Patiala 1977.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

ENGLISH LANGUAGE SKILLS-1
Course Code: BSML-1212

Course Outcomes:

After passing this course, the students will be able to:

CO 1: understand fundamental grammatical rules governing tenses, the use of modal verbs and make correct usage in their language through the study of "English Grammar in Use" by Raymond Murphy

CO 2: to develop the art of creative expression by writing a paragraph on any given topic

CO 3: comprehend the meaning of texts and answer questions related to situations, episodes, and characters depicted in them through the study of the essays in the text "Prose for Young Learners"

CO 4: appreciate the writings of various Indian and foreign story and prose writers and relate them to their socio-cultural milieu through the study of the essays in the text "Prose for Young Learners"

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

ENGLISH LANGUAGE SKILLS-1
Course Code: BSML-1212

Max. Marks: 100

Examination Time: 3 Hrs **Theory: 70**

Credits (L-T-P):4-0-0 **CA: 30**

Instructions for the Examiner:
Eight questions of equal marks (Specified in the syllabus) 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.

The syllabus is divided in four sections as mentioned below.

SECTION–A

English Grammar in Use, 5th Edition by Raymond Murphy, CUP (Units: 1-37)

SECTION–B

Paragraph Writing and English Grammar in Use (Units: 38-48)

SECTION–C

Prose for Young Learners: Essays at Sr. No. 1, 2, 3, 5 and 6

SECTION–D

Prose for Young Learners: Essays at Sr. No. 7, 8, 9, 10 and 11

Texts Prescribed:

1. *English Grammar in Use* (Fourth Edition) by Raymond Murphy, CUP
2. *Tales of Life* (Guru Nanak Dev University, Amritsar)
3. *Prose for Young Learners* (Guru Nanak Dev University, Amritsar)

Bachelor of Science (Medical) Semester–I (Session 2024-25)

ZOOLOGY (DIVERSITY OF NONCHORDATES- I) (PROTOZOA - ANNELIDA)
Course Code: BSML-1483
(THEORY)

Course Outcome

After passing this course the student will be able to:

- CO1: Gain knowledge about physiology of unicellular life and parasitic protozoan.
- CO2: Understand the important marine water non chordates.
- CO3: Learn about parasitic Platyhelminthes
- CO4: Understand the economic importance and physiology of Ascaris and earthworm

Bachelor of Science (Medical) Semester–I (Session 2024-25)

ZOOLOGY (DIVERSITY OF NONCHORDATES- I) (PROTOZOA - ANNELIDA)
Course Code: BSML-1483
(THEORY)

Credits(L-T-P): 4-0-0 **Max Marks: 100**
Time: 3 Hours **Theory: 70**
CA: 30

Instructions for the Paper Setter

Eight questions of equal marks (14 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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.

Detailed Type study of the following animals

UNIT-I

Protozoa: *Amoeba proteus*, *Paramecium caudatum* (with special reference to Kappa particles in *P. aurelia*) *Plasmodium vivax.*

Introduction to parasitic protozoans

UNIT-II

Parazoa (Porifera): *Sycon*

Cnidaria (Coelentrata): *Obelia*

UNIT-III

Platyhelminthes: *Fasciola hepatica*

Taenia solium

Larvae of *Fasciola hepatica* and *Taenia solium*

UNIT-IV

Aschelminthes: *Ascaris,* Parasitic adaptations in Helminthes

Annelida: *Pheretima posthuma* (Earthworm)

Suggested Readings:

1. Dhami, P.S. &Dhami, J. K (2001), Invertebrates, R. Chand & Co., New Delhi.
2. Brusca, R. C. and Brusca, G. J. (2003), Invertebrates (2nd ed). Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts.
3. Engemann, J. G. and Hegner, R. W. (1981), Invertebrate Zoology (3rd ed.) Macmillan, New York.
4. Gardiner, M. S. (1972), The Biology of Invertebrates, McGraw Hill, New York.
5. Meglitsch, P. A. and Schran, F. R. (1991), Invertebrate Zoology (3rd ed). Oxford University Press, New York.
6. Pechenik, A. Jan. (2000), Biology of the invertebrates, (4th ed), McGraw Hill Book Co. Singapore.

Bachelor of Science (Medical) Semester–I (Session 2024-25)

ZOOLOGY (NONCHORDATES- I LAB)
Course Code: BSMP-1483
(PRACTICAL)

Course Outcome

After passing this course the student will be able to:

- CO1. Familiarise with Scientific method
- CO2. Recognise the importance of conservation
- CO3. Observe chromosomal arrangements during cell division
- CO4. Understand role of invertebrates

Bachelor of Science (Medical) Semester–I (Session 2024-25)

ZOOLOGY (NONCHORDATES – I LAB)
Course Code: BSMP-1483
(PRACTICAL)

Credits(L-T-P): 0-0-2 **Max Marks: 50**
Time: 3 Hours **Practical: 35**
CA: 15

Instructions for the Practical Examiners: Question paper is to set on the spot jointly by the Internal and External Examiners. Two copies of the same should be submitted for the record to COE Office, Kanya Maha Vidyalaya, Jalandhar

Guidelines for conduct of practical Examination: -

1. Identify and classify the specimens upto order level. Write a note on their habit, habitat, special features and economic importance. 7
2. Identify the slides/micrographs and give two reasons for identification. 7
3. Make a temporary mount of protozoa. 4
4. Draw a well labelled sketch of the given system of the organism and explain to the examiner. 5
5. Report 5
6. Viva-voce & Practical file. 7

1. Classification up to order level with ecological notes and economic importance (if any) of the following animals (Through Specimens or slides):

A. Protozoa: *Amoeba, Euglena, Trypanosoma, Noctiluca, Eimeria, Monocystis, Paramecium Opalina, Vorticella, Balantidium, Nyctotherus* and *Polystomella.*

B. Porifera: *Sycon, Grantia, Euplectella, Hyalonema, Spongilla, Euspongia.*

C. Cnidaria: *Porpita, Velella, Physalia, Aurelia, Rhizostoma, Metridium, Millipora, Alcyonium, Tubipora, Zoanthus, Madrepora, Favia, Fungia and Astrangia.*

Hydra (W.M.), *Hydra* with buds, *Obelia* (colony and medusa), *Sertularia, Plumularia, Tubularia, Bougainvillea* and *Aurelia*

D. Platyhelminthes: *Dugesia, Fasciola, Taenia, Echinococcus.*

Miracidium, Sporocyst, Redia, Cercaria of *Fasciola,* scolex and proglottids of *Taenia* (mature and gravid).

E. Aschelminthes: *Ascaris* (male and female), *Trichinella, Ancylostoma.*

F. Annelida: *Pheretima, Nereis, Heteronereis, Polynoe, Eunice, Aphrodite, Chaetopterus, Arenicola, Tubifex* and *Pontobdela*

2. **Study of the following permanent stained preparations**:

A. L.S. and T.S. *Sycon,* gemmules, spicules and spongin fibers of a sponge.

B. T.S. *Hydra* (Testis and ovary region)

C. T.S. *Fasciola* (Different regions)

D. T.S. *Ascaris* (Male and Female)

E. T.S. *Pheretima* (pharyngeal and typhlosolar regions), Setae, septal nephridia, spermathecae and ovary of *Pheretima* (Earthworm).

3. **Preparation of the following slides**:

Temporary permanent preparation of freshwater Protozoan culture.

4. Demonstration of digestive, reproductive and nervous systems of earthworm with the help of charts/videos/models.

Note:- Some changes can be made in the practical depending on the availability of material.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Chemistry (Inorganic Chemistry-I: Atomic structure and periodic table)
Course Code: BSML-1084
(THEORY)

Course Outcomes:

Students will be able to

CO1: Predict electronic properties of atoms using current models and theories in chemistry, sketch the probability density curves, identify the periodic trends in physical and chemical properties of elements, describe the arrangement of the elements in the Periodic Table& change from metallic to nonmetallic character.

CO2: Describe VBT, VSEPR theory and predicts the geometry of simple molecules & molecular orbital theory of homonuclear diatomic molecules, explain, predict & draw structures of simple ionic compounds.

CO3: Explains & compares the trends in atomic and physical properties of p-block elements, explain the atomic, physical and chemical properties of alkali metals and alkaline earth metals and concepts of Acids and Bases.

CO4: Detailed studies of Group 13 and 14 of p-block elements.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Chemistry (Inorganic Chemistry-I: Atomic structure and periodic table)

Course Code: BSML-1084

(THEORY)

Exam Time: 3Hrs. **Max. Marks: 100**
Credits (L-T-P): 4-0-0 **(Theory: 70, CA: 30)**

Instructions for the Paper Setters: Eight questions of equal marks (Fourteen 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

SECTION-A **(15 Hrs.)**

Atomic Structure- Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, Schrodinger wave equation, Quantum numbers, Shapes of s, p, d and f orbitals. Aufbau's and Pauli's Exclusion principle, Hund's multiplicity rule. Electronic configurations of the elements and ions.

Periodic Properties- Position of elements in the periodic table; effective nuclear charge and its calculations. Details of atomic and ionic radii, ionization energy, electron affinity and electronegativity.

SECTION-B **(15 Hrs.)**

Ionic Solids: Concept of close packing, Ionic structures, radius ratio rule and coordination number, limitation of radius ratio rule, lattice defects, semiconductors, lattice energy and Born–Haber cycle. Fajan's rule, Weak Interactions –Hydrogen bonding, van der Waals forces.

Chemical Bonding-I: Covalent Bond–Valence bond theory and its limitations, directional characteristics of covalent bond, various types of hybridization and shapes of simple inorganic molecules and ions, Valence shell electron pair repulsion (VSEPR) theory, homonuclear and heteronuclear diatomic molecules. Multicentre bonding in boranes, Percentage ionic character from dipole moment and electronegativity difference.

SECTION-C **(15 Hrs.)**

s- and p-block elements and their comparative study: General remarks about each group (I-VIII), trends in electronic configuration, atomic and ionic radii, ionization potential, electron affinity, electronegativity, oxidation states, Melting and boiling point, density, electropositive or metallic character, flame colouration. Lattice energies. Photoelectric effect, inert pair effect, catenation and hetero catenation. Anomalies in first and second row elements. Chemical properties in details.

Acids and Bases: Arrhenius, Bronsted-Lowry, the Lux-Flood, solvent system and Lewis concepts of acids and bases

SECTION-D (15 Hrs.)

p-Block Elements: Group 13: General characteristics, Atomic and ionic radii, melting and boiling point, Ionisation energies, Oxidation states, Electropositive character, Tendency to form covalent compounds. **Compounds of group 13**: Hydrides, Oxides and hydroxides, Oxoacid; Structure and Properties of Boric acid, Preparation, properties and structure of Diborane, Borazine, Boron halides: Boron hydrides ($LiBH_4$, $NaBH_4$), Anomalous behaviourof Boron and its diagonal relationship with Silicon.

Group 14: General characteristics; Atomic radii, Ionisation energies, Melting and boiling point, oxidation state, metallic character, catenation, Allotropy, Tendency to form multiple bonding. **Compounds of group 14**: Hydrides of silicon: preparation and properties, toxic nature of CO, Dioxide of carbon and silicon. Comparison of carbon tetrachloride and silicon tetrachloride. Chemistry of Fullerenes.

Books Suggested

1. Cotton, F.A., Wilkinson, G., Gaus, P.L., Basic Inorganic Chemistry; 3rd edition, Pubs: John Wiley Sons. 1995.
2. Lee, J.D., Concise Inorganic Chemistry; 4th edition, Pubs: Chapman Hall Ltd., 1991.
3. Shriver, D.E., Alkins, P.W., Langford, C.H., Inorganic Chemistry; 4th edition, Oxford Publisher: Oxford University Press, 2006.
4. Douglas, B. McDamiel, D., Alexander, J., Concepts and Models of InorganicChemistry; 3rd edition, Pubs: John Wiley and Sons Inc., 1994.
5. Miessler, G.L., Larr, D.A., Inorganic Chemistry; 3rd edition, Pubs: Pearson Education Inc., 2004.
6. Jolly, W.L., Modern Inorganic Chemistry; 2nd edition, Pubs: McGraw-Hill Publishing Company Limited, 1991.
7. Purcell, K.F., Kotz, J.C., Inorganic Chemistry; Pubs: W.B. Saunders Company, 1977.
8. Puri, B.R., Sharma, L.R., Kalia, K.C., Principles of Inorganic Chemistry; 30th edition, Pubs: Milestones Publisher, 2006-07.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Chemistry (Inorganic Chemistry-I: Lab Qualitative Analysis)
Course Code: BSMP-1084
(PRACTICAL)

Course outcomes

Students will be able

CO1: To develop technical skills relevant to quantitative analysis

CO2: To separate and identify the various ions present in the mixture

CO3: To understand and master the technique of volumetric analysis

CO4: To analyze an acidic and alkali content in different samples

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Chemistry (Inorganic Chemistry-I: Lab Qualitative Analysis)
Course Code: BSMP-1084
(PRACTICAL)

Time: 3 Hrs **Marks: 50**

Credits (L-T-P): 0-0-2 **(Practical: 35, CA: 15)**

Semi Micro analysis. Cation analysis, Separation and identification of ions from groups I, II,III, IV, V, and VI. Anionic analysis. Four ions with no interference.

Volumetric titrations

1. Determination of strength of Na_2CO_3 solution by titrating it against a standard solution of HCl.
2. Determination of molarity of $KMnO_4$ solution by titrating it against a standard solution of Oxalic acid.
3. Standardise the given $K_2Cr_2O_7$ solution by titrating it against a standard solution
   Of Mohr's Salt.
4. Estimation of free alkali present in different soaps/detergents
5. Estimation of Cu(II) and $K_2Cr_2O_7$ using sodium thiosulphate solution (Iodimetrically).
6. Estimation of available chlorine in bleaching powder iodometrically.

Books Suggested

1. Mendham, J., A. I. Vogel's Quantitative Chemical Analysis 6th Ed., Pearson, 2009.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BOTANY (DIVERSITY OF CRYPTOGAMS)
Course Code: BSML-1075
(THEORY)

Course outcome:

After passing this course the course the student will be able to:

CO1: Understand the classification, characteristic features, life cycle and economic value of algae.

CO2: Develop knowledge about features, classification, life cycle and economic importance of fungi.

CO3: Build a strong foundation in Cryptogamic Botany, particularly Bryophytes, to apply this knowledge in broader botanical studies.

CO4: Understand the classification, morphology, biology, and economic importance of pteridophytic plants.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BOTANY (DIVERSITY OF CRYPTOGAMS)
Course Code: BSML-1075
(THEORY)

Time: 3 Hrs. **Max. Marks: 100**
Credits (L-T-P): 4-0-0 **Theory: 70**
C.A.:30

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) 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.

SECTION–A

Algae: General characters, classification and economic importance; important features and life history of Chlorophyceae– *Volvox*, *Oedogonium*; Xanthophyceae–*Vaucheria*; Phaeophyceae– *Ectocarpus*; Rhodophyceae–*Polysiphonia*.

SECTION–B

Fungi: Important features and life history of Mastigomycotina–*Phytophthora*; Zygomycotina–*Mucor*; Ascomycotina–*Saccharomyces*, *Peziza*; Basidiomycotina–*Puccinia*, *Agaricus*; Deuteromycotina–*Colletotrichum*. General account of Lichens.

SECTION–C

Bryophyta: Amphibians of plant kingdom displaying alternation of generations; structure, reproduction, ecology and economic importance. Classification of bryophytes, Structure and reproduction of *Marchantia* (Hepaticopsida), *Anthoceros* (Anthocerotopsida), *Funaria* (Bryopsida).

SECTION–D

Pteridophyta: First vascular plant; classification; ecology and economic importance of pteridophytes. Important characteristics of Psilopsida, Lycopsida, Sphenopsida and Pteropsida. Structure and reproduction in *Rhynia*, *Lycopodium*, *Selaginella*, *Equisetum*, and *Pteris*

Suggested Readings:-

1. Alexopoulous, C.J., Mims, C.W. and Blackwell, M. Introductory Mycology (4th Edition), Wiley - Blackwell, USA.
2. Dube, H.C., 2007, A Textbook of Fungi, Bacteria and Viruses (3rd edition), Scientific Publishers, India
3. Dube, H.C., 2013, An Introduction to Fungi (4th edition), Scientific Publishers., India.

4. Goffinet B. (2008). Bryophyte Biology. Cambridge University Press, UK.
5. Sambamurty, S.S. (2013). A Textbook of Bryophytes, Pteridophytes, Gymnosperms and Paleobotany. I K International Publishing House Pvt Ltd., India
6. Sharma, O.P. (2014). Bryophyta. McGraw Hill Education Pvt Ltd., India.
7. Srivastava, H.N., 2018, Diversity of Microbes and Cryptogams, Vol. I, Pradeep's Publication.
8. Vashishta, P.C, Sinha, A.K, Kumar, A., (2010). Botany for Degree Students Pteridophyta (Vascular cryptogams). S.S. Chand Publications.
9. Sharma, O.P., 2004, Text Book of Thallophytes. McGraw Hill Publishing Co., India.
10. Sharma, P.D., 2004, The Fungi, (2nd Edition) Rastogi Publication, India

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BOTANY (DIVERSITY OF CRYPTOGAMS)
Course Code: BSMP-1075
(PRACTICAL)

Course outcome:

After passing this course the course the student will be able to:

CO1: Students will assess various phylogenetic information sources, such as ultrastructure and morphology, to understand algae and fungi.

CO2: Understand the evolutionary history and time-scale of non-vascular plants, including the development of the first terrestrial plants from green algae.

CO3: Identify fungal disease symptoms in host plants and study pathogen morphology through section cutting.

CO4: Identify and classify different types of lichens.

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

BOTANY (DIVERSITY OF CRYPTOGAMS)
Course Code: BSMP-1075
(PRACTICAL)

Time: 3 Hrs **Max. Marks: 50**

Credits (L-T-P): 0-0-2 **Pracrical: 35**

C.A.:15

Suggested Laboratory Exercises:-

Teachers may select plants/material available in their locality/institution

1. Study of the genera included under algae and fungi.

2. Study of morphology, reproductive structures and anatomy of the examples cited in theory under Bryophyta and Pteridophyta

3. Observation of disease symptoms in hosts infected by fungi.

4. Section cutting of diseased material and identification of the pathogens as per the theory syllabus.

5. Study of morphology of Lichens (crustose, foliose and fruticose).

Bachelor of Science (Medical/Honours) Semester–I (Session 2024-25)

Course Title: Foundation Course
Course Code: VACF-1491

Nature of Course: Audit Course (Value Added)

Course Duration: 30 hours

Course intended for: Semester I students undergraduate degree programs of all 25 streams.

Course Credits: 2

PURPOSE & AIM

This course has been designed to strengthen the intellectual foundation of all the new entrants in the college. One of the most common factors found in the students seeking admission in college after high school is the lack of an overall view of human history, knowledge of global issues, peaks of human intellect, social/political thinkers and inventors & discoverers who have impacted human life. For a student, the process of transition from school to college is full of apprehension and skepticism regarding adapting themselves to new system. The Foundation Programme intends to bridge the gap between high school and college education and develop an intellectual readiness and base for acquiring higher education.

INSTRUCTIONAL OBJECTIVES

- to enable the students to realise their position in the whole saga of time and space
- to inculcate in them an appreciation of life, cultures and people across the globe
- to promote, in the students, an awareness of human intellectual history
- to make them responsible and humane world citizens so that they can carry forward therich legacy of humanity

LEARNING OUTCOMES

After the completion of this Audit course, students will be able to

- learn how past societies, systems, ideologies, governments, cultures and technologieswere built, how they operated, and how they have changed
- understand how the rich history of the world helps us to paint a detailed picture of wherewe stand today
- understand the Vedic theism, Upanishads Philosophy and doctrines of Jainism, Buddhism andSikhism
- acquire knowledge of women rights and courage to face day to day challenges
- acknowledge the changes in society, religion and literature in the renaissance period and the importance of empathy and compassion for humanity
- learn about the prominent Indians (Men and Women) who contributed significantly in freedom struggle, education, economic development and in the formation and

evolution of our nation

- understand meaning of race and how that concept has been used to justify exclusion, inequality, and violence throughout history and the origin of civil right movements to fight for equality, liberty and fraternity
- critically evaluate the socio-political and economic issues at global level and its implications in the present
- upgrade and enhance learning technological skills and striking a balance between technology and their well being
- take pride in learning the saga of Indian Past Culture and Heritage
- understand the rich legacy of KMV and its progressive endeavours

MODULE	TITLE	CONTACT HOURS
I	**Introduction and Initial Assessment**	**2**
II	**The Human Story**	**3**
III	***The Vedas* and the Indian Philosophy**	**2.5**
IV	**The Journey of Woman The Story and the Dream**	**2.5**
V	**Changing Paradigms in Society, Religion & Literature**	**2.5**
VI	**Makers of Modern India**	**2.5**
VII	**Racism: Story of the West**	**2.5**
VIII	**Modern World at a Glance: Political & Economic Perspective**	**2.5**
IX	**Technology Vis a Vis Human Life**	**2.5**
X	**My Nation My Pride**	**2.5**
XI	**The KMV Experience**	**2.5**
XII	**Final Assessment, Feedback and Closure**	**2.5**

EXAMINATION

- **Total Marks: 50 (Final Exam: 35; Internal Assessment: 15)**
- Final Exam: multiple choice quiz**.** Marks – 20; Time: 1 hour
- Internal Assessment: 10 (Assessment: 6; Attendance: 4)
  Comparative assessment questions (medium length) in the beginning and close of the programme.Marks: 3; Time: 0.5 hour each at the beginning and end.

- Total marks: 50 converted to grade for final result
- Grading system: 90% marks & above: A grade
  80% - 89% marks: B
  grade 70% - 79%

marks: C grade 60% - 69% marks: D grade 50% - 59% marks: E grade

Below 50% marks: F grade (Fail - must give the exam again)

SYLLABUS

Module I Being a Human: Introduction & Initial Assessment

- Introduction to the programme
- Initial Assessment of the students through written answers to a couple of questions

Module 2 The Human Story

- Comprehensive overview of human intellectual growth right from the birth of humanhistory
- The wisdom of the Ancients
- Dark Middle Ages
- Revolutionary Renaissance
- Progressive modern times
- Most momentous turning points, inventions and discoveries

Module 3 *The Vedas* and the Indian Philosophy

- Origin, teachings and significance of *The Vedas*
- Upnishads and Puranas
- Karma Theory of *The Bhagwad Gita*
- Main tenets of Buddhism & Jainism
- Teachings of Guru Granth Sahib

Module 4 Changing Paradigms in Society, Religion & Literature

- Renaissance: The Age of Rebirth
- Transformation in human thought
- Importance of humanism
- Geocentricism to heliocentricism
- Copernicus, Galileo, Columbus, Darwin and Saint Joan
- Empathy and Compassion

Module 5 Woman: A Journey through the Ages

- Status of women in pre-vedic times
- Women in ancient Greek and Roman civilizations
- Women in vedic and ancient India

- Status of women in the Muslim world
- Women in the modern world
- Crimes against women
- Women labour workforce participation
- Women in politics
- Status of women- our dream

Module 6 Makers of Modern India

- Early engagement of foreigners with India
- Education: The first step to modernization
- Railways: The lifeline of India
- Raja Ram Mohan Roy, Gandhi, Nehru, Vivekanand, Sardar Patel etc.
- Indira Gandhi, Mother Teresa, Homai Vyarawala etc.
- The Way Ahead

Module 7 Racism: Story of the West

- European beginnings of racism
- Racism in the USA - Jim Crow Laws
- Martin Luther King Jr. and the battle against racism
- Apartheid and Nelson Mandela
- Changing face of racism in the modern world

Module 8 Modern World at a Glance: Political & Economic Perspective

- Changing world order
- World War I & II
- UNO and The Commonwealth
- Nuclear Powers; Terrorism
- Economic Scenario: IMF, World Bank
- International Regional Economic Integration

Module 9 Technology Vis a Vis Human Life

- Impact of technology on modern life
- Technological gadgets and their role in our lives
- Technology and environment
- Consumerism and materialism
- Psychological and emotional consequences of technology
- Harmonizing technology with ethics and humaneness

Module 10 My Nation My Pride

- Indian Past Culture and Heritage
- Major Discoveries (Medicinal and Scientific)
- Vedic Age
- Prominent Achievements
- Art, Architecture and Literature

Module 11 The KMV Experience

- Rich Legacy of KMV
- Pioneering role in women emancipation and empowerment
- KMV Contribution in the Indian Freedom Struggle
- Moral, cultural and intellectual heritage of KMV
- Landmark achievements
- Innovative initiatives; international endeavours
- Vision, mission and focus
- Conduct guidelines for students

Module 12 Final Assessment, Feedback & Closure

- Final multiple choice quiz
- Assessment through the same questions asked in the beginning
- Feedback about the programme from the students
- Closure of the programme

PRESCRIBED READING

- ***The Human Story*** published by Dawn Publications

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

PUNJABI (COMPULSORY)
Course Code: BBML-2421

Course Outcomes:

CO1: ‘ਦੋ ਰੰਗ’ (ਕਹਾਣੀ ਭਾਗ) ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਕਹਾਣੀ ਪ੍ਰਤੀ ਦਿਲਚਸਪੀ, ਸੂਝ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ।ਇਸ ਦਾ ਹੋਰ ਮਨੋਰਥ ਕਹਾਣੀ ਦੀ ਵਿਸ਼ਲੇਸ਼ਣ ਤੇ ਮੁਲੰਕਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ ਵੀ ਹੈ ਤਾਂ ਕਿ ਉਹ ਸਮਕਾਲੀ ਸਮਾਜ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝ ਸਕਣ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਦ੍ਰਿਸ਼ਟੀ ਬਣਾ ਸਕਣ।

CO2: ‘ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿਧ ਹਸਤੀਆਂ’ ਜੀਵਨੀ ਦੀ ਵਿਧਾ ਨੂੰ ਸਿਲੇਬਸ ਵਿਚ ਸ਼ਾਮਿਲ ਕਰ ਕੇ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਜੀਵਨੀ ਨੂੰ ਪੜ੍ਹਣ ਦੀ ਰੁਚੀ ਨੂੰ ਪੈਦਾ ਕਰਨਾ ਹੈ ਅਤੇ ਜੀਵਨੀ ਜਗਤ ਨਾਲ ਜੋੜਣਾ ਹੈ।

CO3: ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ ਪੜ੍ਹਣ ਨਾਲ ਵਿਦਿਆਰਥੀ ਇਸਦੇ ਮੁੱਢਲੇ ਸੰਕਲਪਾਂ ਨੂੰ ਆਧਾਰ ਬਣਾ ਕੇ ਇਹਨਾਂ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

CO4: ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ ਲਿਖਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਸ ਕਲਾ ਵਿਚ ਨਿਪੁੰਨ ਕਰਨਾ ਹੈ। ਮੁਹਾਵਰੇ/ਅਖਾਣ ਦੀ ਵਰਤੋਂ ਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ।ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

PUNJABI (COMPULSORY)
Course Code: BBML-2421

ਸਮਾਂ: 3 ਘੰਟੇ **Maximum Marks: 100**

Credits (L-T-P) **Theory: 70**
4-0-0 **CA: 30**

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 14 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠਕ੍ਰਮ ਅਤੇ ਪਾਠ ਪੁਸਤਕਾਂ

ਯੂਨਿਟ-I

ਦੋ ਰੰਗ (ਕਹਾਣੀ ਭਾਗ) (ਸੰਪਾ.ਹਰਜਿੰਦਰ ਸਿੰਘ ਢਿਲੋਂ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਸਰਗੋਧੀਆ),ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ।
(ਵਿਸ਼ਾ-ਵਸਤੂ/ ਪਾਤਰ ਚਿਤਰਨ / ਸਾਰ) 14 ਅੰਕ

ਯੂਨਿਟ-II

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ (ਜੀਵਨੀ ਨੰ: 10 ਤੋਂ 18 ਤਕ) (ਸੰਪਾ.ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ, ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਮ), ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਵਿਸ਼ਾ-ਵਸਤੂ/ ਨਾਇਕ ਬਿੰਬ/ ਸਾਰ) 14 ਅੰਕ

ਯੂਨਿਟ-III

(ੳ) ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ : ਪਰਿਭਾਸ਼ਾ, ਮੁੱਢਲੇ ਸੰਕਲਪ।
(ਅ) ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ 14 ਅੰਕ

ਯੂਨਿਟ-IV

(ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
(ਅ) ਮੁਹਾਵਰੇ/ਅਖਾਣ 14 ਅੰਕ

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BASIC PUNJABI
In lieu of Punjabi (Compulsory)
Course Code: BSML-2031

Course Outcomes

CO1: ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ (ਨਾਂਵ, ਪੜਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ ਅਤੇ ਵਿਸਮਿਕ) ਨੂੰ ਪੜ੍ਹਾਉਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਅਮੀਰੀ ਦਾ ਅਤੇ ਬਾਰੀਕੀਆਂ ਨੂੰ ਸਮਝਣ ਲਈ ਵੱਖਰੇ -ਵੱਖਰੇ ਸਿਧਾਂਤਾਂ ਦਾ ਵਿਕਾਸ ਕਰਨਾ ਹੈ।

CO2: ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ (ਸਾਧਾਰਨ ਵਾਕ, ਸੰਯੁਕਤ ਵਾਕ, ਮਿਸ਼ਰਤ ਵਾਕ, ਬਿਆਨੀਆ ਵਾਕ, ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਵਾਕ ਅਤੇ ਹੁਕਮੀ ਵਾਕ) ਦੀ ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਇਸ ਦੀ ਬਣਤਰ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ ਅਤੇ ਉਨ੍ਹਾਂ ਦੀ ਭਾਸ਼ਾ ਤੇ ਪਕੜ ਮਜਬੂਤ ਹੋਵੇਗੀ।

CO3: ਪੈਰ੍ਹਾ ਰਚਨਾ ਅਤੇ ਸੰਖੇਪ ਰਚਨਾ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਬੁੱਧੀ ਨੂੰ ਤੀਖਣ ਕਰਦਿਆਂ ਉਨਾਂ ਦੀ ਲਿਖਣ ਪ੍ਰਤਿਭਾ ਨੂੰ ਉਜਾਗਰ ਕਰਨਾ ਹੈ।

CO4: ਘਰੇਲੂ ਅਤੇ ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ ਲਿਖਣ ਦਾ ਮਨੋਰਥ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਇਸ ਕਲਾ ਵਿਚ ਨਿਪੁੰਨ ਕਰਨਾ ਹੈ। ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ ਦੀ ਵਰਤੋਂ ਨਾਲ ਗੱਲਬਾਤ ਵਿਚ ਪਰਪੱਕਤਾ ਆਉਂਦੀ ਹੈ। ਇਹ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਗੱਲਬਾਤ ਵਿਚ ਨਿਖਾਰ ਲਿਆਉਣ ਦਾ ਕੰਮ ਕਰਨਗੇ।

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BASIC PUNJABI
In lieu of Punjabi (Compulsory)
Course Code: BSML-2031

ਸਮਾਂ : 3 ਘੰਟੇ **Maximum Marks: 100**

Credits (L-T-P) **Theory: 70**
4-0-0 **CA: 30**

ਅੰਕ ਵੰਡ ਅਤੇ ਪਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

1. ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਚਾਰ ਸੈਕਸ਼ਨ ਹੋਣਗੇ।ਸੈਕਸ਼ਨ A-D ਤੱਕ ਦੇ ਪ੍ਰਸ਼ਨ ਯੂਨਿਟ I-IV ਵਿਚੋਂ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ।

2. ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

3. ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 14 ਅੰਕ ਹਨ।

4. ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ ਪ੍ਰਸ਼ਨਾਂ

ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਪਾਠਕ੍ਰਮ

ਯੂਨਿਟ-I

ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ : ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ (ਨਾਂਵ, ਪੜਨਾਂਵ, ਕਿਰਿਆ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ,
ਯੋਜਕ ਅਤੇ ਵਿਸਮਿਕ) 14 ਅੰਕ

ਯੂਨਿਟ-II

ਪੰਜਾਬੀ ਵਾਕ ਬਣਤਰ : ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ
(ੳ) ਸਾਧਾਰਨ ਵਾਕ, ਸੰਯੁਕਤ ਵਾਕ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ)
(ਅ) ਬਿਆਨੀਆ ਵਾਕ, ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਵਾਕ ਅਤੇ ਹੁਕਮੀ ਵਾਕ (ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ) 14 ਅੰਕ

ਯੂਨਿਟ-III

ਪੈਰ੍ਹਾ ਰਚਨਾ

ਸੰਖੇਪ ਰਚਨਾ 14 ਅੰਕ

ਯੂਨਿਟ-IV

ਚਿੱਠੀ ਪੱਤਰ (ਘਰੇਲੂ ਅਤੇ ਦਫ਼ਤਰੀ)
ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ (ਲਿਸਟ ਨਾਲ ਨੱਥੀ ਹੈ) 14 ਅੰਕ

ਅਖਾਣ

ਉਠੇ ਤਾ ਉੱਠ ਨਹੀਂ ਰੇਤੇ ਦੀ ਮੁੱਠ ,ਉੱਦਮ ਅੱਗੇ ਲੱਛਮੀ ਪੱਖੇ ਅੱਗੇ ਪੌਣ ,ਉਹ ਦਿਨ ਡੁੱਬਾ ਜਦੋਂ ਘੋੜੀ ਚੜ੍ਹਿਆ ਕੁੱਬਾ ,ਉੱਚੀ ਦੁਕਾਨ ਫਿੱਕਾ ਪਕਵਾਨ ,ਉਲਟੀ ਵਾੜ ਖੇਤ ਨੂੰ ਖਾਏ ,ਉੱਚਾ ਲੰਮਾ ਗੱਭਰੂ ਪੱਲੇ ਠੀਕਰੀਆਂ , **ਅਸ਼ਰਫ਼ੀਆਂ ਦੀ ਲੁੱਟ ਤੇ ਕੋਲਿਆਂ ਤੇ ਮੁਹਰਾਂ, ਅੱਗੇ ਸੱਪ ਪਿੱਛੇ ਸ਼ੀਂਹ, ਆਦਰ ਤੇਰੀ ਚਾਦਰ ਨੂੰ ਬਹਿਣਾ ਤੇਰੇ ਗਹਿਣੇ ਨੂੰ, ਆਪੇ ਫਾਥੜੀਏ ਤੈਨੂੰ ਕੌਣ ਛੁਡਾਏ, ਆਪਣੇ ਹੱਥੀਂ ਆਪਣਾ ਆਪੇ ਹੀ ਕਾਜ ਸਵਾਰੀਐ, ਆਰੀ ਨੂੰ ਇੱਕ ਪਾਸੇ ਦੰਦੇ ਜਹਾਨ ਨੂੰ ਦੋਹੀਂ ਪਾਸੀਂ,**ਅੱਖੀਂ ਵੇਖ ਕੇ ਮੱਖੀ ਨਹੀਂ ਨਿਗਲੀ ਜਾਂਦੀ ,ਅੰਦਰ ਹੋਵੇ ਸੱਚ ਤਾਂ ਕੋਠੇ ਚੜ੍ਹ ਕੇ ਨੱਚ, ਆਪੇ ਮੈਂ ਰੱਜੀ ਪੁੱਜੀ ਆਪੇ ਮੇਰੇ ਬੱਚੇ ਜਿਉਣ,ਆਪ ਕੁਚੱਜੀ ਵਿਹੜੇ ਨੂੰ ਦੋਸ਼ ,ਅੰਨ੍ਹਾ ਵੰਡੇ ਰਿਉੜੀਆਂ ਮੁੜ ਮੁੜ ਆਪਣਿਆਂ ਨੂੰ ,ਅਕਲ ਵੱਡੀ ਕੇ ਮੱਝ ,ਅੰਨ੍ਹਿਆਂ ਵਿੱਚ ਕਾਣਾ ਰਾਜਾ ,ਆਪਣੀ ਪੀੜ੍ਹੀ ਹੇਠ ਸੋਟਾ ਫੇਰਨਾ ,ਇਕ ਅਨਾਰ ਸੌ ਬਿਮਾਰ, ਇਕ ਹੱਥ ਨਾਲ ਤਾੜੀ ਨਹੀਂ ਵੱਜਦੀ, ਇੱਕ ਚੁੱਪ ਸੌ ਸੁੱਖ ਝੱਟ ਮੰਗਣੀ ਪੱਟ ਵਿਆਹ, ਸਹਿਜ ਪੱਕੇ ਸੋ ਮੀਠਾ ਹੋਵੇ ,ਦਾਲ ਵਿੱਚ ਕਾਲਾ ਹੋਣਾ, **ਸੰਗ ਤਾਰੇ ਕੁਸੰਗ ਡੋਬ,** ਸੱਦੀ ਨਾ ਬੁਲਾਈ ਮੈਂ ਲਾੜੇ ਦੀ ਤਾਈਂ ,ਸਵੈ ਭਰੋਸਾ ਵੱਡਾ ਤੋਸਾ,ਸੌ ਦਿਨ ਚੋਰ ਦੇ ਇਕ ਦਿਨ ਸਾਧ ਦਾ, ਸੱਪ ਦਾ ਬੱਚਾ ਸਪੋਲੀਆ, ਸੱਪ ਮਰ ਜਾਵੇ ਲਾਠੀ ਵੀ ਨਾ ਟੁੱਟੇ ,ਸਾਈਆਂ ਕਿਤੇ ਵਧਾਈਆਂ ਕਿਤੇ, ਹੰਕਾਰਿਆ ਸੋ ਮਾਰਿਆ, **ਹੱਥ ਨੂੰ ਹੱਥ ਧੋਂਦਾ ਹੈ,** ਹਾਥੀ ਲੰਘ ਗਿਆ ਪੂਛ ਰਹਿ ਗਈ, **ਕੋਹ ਨਾ ਚੱਲੀ ਬਾਬਾ ਤਿਹਾਈ**,ਕੁੱਛੜ ਕੁੜੀ ਸ਼ਹਿਰ ਢੰਡੋਰਾ, ਕੋਲਿਆਂ ਦੀ ਦਲਾਲੀ ਵਿੱਚ ਮੂੰਹ ਕਾਲਾ, ਕਰੇ ਕੋਈ ਭਰੇ ਕੋਈ , **ਖਿੱਦੋ ਫ਼ਰੋਲਿਆਂ ਲੀਰਾਂ ਹੀ ਨਿਕਲਦੀਆਂ ਹਨ,** ਖ਼ਵਾਜੇ ਦਾ ਗਵਾਹ ਡੱਡੂ, ਖੇਤੀ ਖਸਮਾਂ ਸੇਤੀ, **ਖਰਬੂਜ਼ੇ ਨੂੰ ਦੇਖ ਕੇ ਖਰਬੂਜ਼ਾ ਰੰਗ ਬਦਲਦਾ ਹੈ,** ਖੂਹ ਪੁੱਟਦੇ ਨੂੰ ਖਾਤਾ ਤਿਆਰ, **ਘੜੇ ਨੂੰ ਹੱਥ ਲਾਇਆ ਸਾਰਾ ਟੱਬਰ ਤਿਹਾਇਆ,** ਘਰ ਦਾ ਭੇਤੀ ਲੰਕਾ ਢਾਹੇ ,ਘਰ ਦੀ ਕੁੱਕੜੀ ਦਾਲ ਬਰਾਬਰ, ਚਿੰਤਾ ਚਿਖਾ ਬਰਾਬਰ, ਛੱਜ ਤਾਂ ਬੋਲੇ ਛਾਣਨੀ ਵੀ ਬੋਲੇ,ਛੋਟੀ ਮੂੰਹ ਵੱਡੀ ਗੱਲ **, ਜੋ ਰਾਤੀਂ ਜਾਗਣ ਕਾਲੀਆਂ ਸੋ ਹੀ ਖਾਣ ਸੁਖਾਲੀਆਂ,** ਜਾਂਦੇ ਚੋਰ ਦੀ ਲੰਗੋਟੀ ਹੀ ਸਹੀ, ਜਿਸ ਦੀ ਕੋਠੀ ਦਾਣੇ ਉਹਦੇ ਕਮਲੇ ਵੀ ਸਿਆਣੇ ,ਜਿਹੜੇ ਗੱਜਦੇ ਨੇ ਉਹ ਵਰ੍ਹਦੇ ਨਹੀਂ , ਝੱਟ ਮੰਗਣੀ ਪੱਟ ਵਿਆਹ, **ਨਵਾਂ ਨੌ ਦਿਨ ਪੁਰਾਣਾ ਸੌ ਦਿਨ, ਪਾਣੀ ਵਿੱਚ ਸੋਟਾ ਮਾਰਿਆਂ ਪਾਣੀ ਦੋ ਨਹੀਂ ਹੋ ਜਾਂਦੇ, ਵਿੱਦਿਆ ਵਿਚਾਰੀ ਤਾਂ ਪਰਉੱਪਕਾਰੀ, ਵੇਲੇ ਦੀ ਨਮਾਜ਼ ਕੁਵੇਲੇ ਦੀਆਂ ਟੱਕਰਾਂ, ਇਕ ਦਰ ਬੰਦ ਸੌ ਦਰ ਖੁੱਲ੍ਹਾ, ਬਿੱਲੀ ਦੇ ਸਿਰ੍ਹਾਣੇ ਦੁੱਧ ਨਹੀਂ ਜੰਮਦਾ,**ਰੱਸੀ ਸੜ ਗਈ ਵੱਟ ਨ੍ਹੀਂ ਗਿਆ

ਮੁਹਾਵਰੇ

ਉਸਤਾਦੀ ਕਰਨੀ, ਉਂਗਲ ਕਰਨੀ, ਉੱਲੂ ਬਣਾਉਣਾ ,ਉੱਚਾ ਸਾਹ ਨਾ ਕੱਢਣਾ, ਉੱਡਦੇ ਫਿਰਨਾ ,ਉੱਘ ਸੁੱਘ ਮਿਲਣੀ,ਅੱਖਾਂ ਵਿਚ ਰੜਕਣਾ , **ਉਂਗਲਾਂ ਤੇ ਨਚਾਉਣਾ, ਉਧੜ-ਧੁੰਮੀ ਮਚਾਉਣਾ, ਊਠ ਦੇ ਮੂੰਹ ਵਿੱਚ ਜ਼ੀਰਾ ਦੇਣਾ,** ਅੱਗ ਲਾਉਣਾ ,ਆਵਾ ਊਤ ਜਾਣਾ ,ਅਸਮਾਨ ਨੂੰ ਟਾਕੀਆਂ ਲਾਉਣਾ, ਅੱਖਾਂ ਵਿੱਚ ਲਾਲੀ ਉਤਰਨੀ ,ਅਕਲ ਤੇ ਪਰਦਾ ਪੈਣਾ, **ਅੱਖਾਂ ਅੱਗੇ ਖੋਪੇ ਚਾੜ ਦੇਣੇ, ਅੱਖਾਂ ਉੱਤੇ ਬਿਠਾਉਣਾ, ਅੱਲੇ ਫੱਟਾਂ ਤੇ ਲੂਣ ਛਿੜਕਣਾ, ਆਪਣੇ ਅੱਗੇ ਕੰਡੇ ਬੀਜਣਾ, ਆਪਣੇ ਤਰਕਸ਼ ਵਿੱਚ ਤੀਰ ਹੋਣਾ, ਸਿਰ ਚੜ੍ਹਨਾ,** ਈਨ ਮੰਨਣੀ, ਈਦ ਦਾ ਚੰਨ ਹੋਣਾ, ਇੱਟ ਨਾਲ ਇੱਟ ਖੜਕਾਉਣਾ,ਸਿਰ ਫਿਰਨਾ, ਸਿਰ ਤੇ ਚੜ੍ਹਨਾ ,ਸਬਰ ਦਾ ਘੁੱਟ ਭਰਨਾ, ਸਿਰ ਪੈਰ ਨਾ ਹੋਣਾ, **ਸਿਰ ਖੁਰਕਣ ਦੀ ਵੇਹਲ ਨਾ ਹੋਣਾ, ਸੱਠੀ ਦੇ ਚੌਲ ਖੁਆਣੇ,** ਹੱਥ ਧੋ ਕੇ ਪਿੱਛੇ ਪੈਣਾ, ਹੱਥੀਂ ਛਾਂਵਾਂ ਕਰਨੀਆਂ, ਹੱਡ ਭੰਨਣੇ, ਹੱਥ ਤੰਗ ਹੋਣਾ ,ਹੱਥ ਮਲਣਾ,ਹੱਥ ਪੈਰ ਮਾਰਨਾ, **ਹੱਥ ਉੱਤੇ ਹੱਥ ਧਰ ਕੇ ਬੈਠਣਾ, ਹੱਥ ਵਟਾਉਣਾ, ਹਵਾ ਦੇ ਘੋੜੇ ਸਵਾਰ ਹੋਣਾ,** ਕੰਨੀਂ ਕਤਰਾਉਣਾ, ਕੰਨ ਤੇ ਜੂੰ ਨਾ ਸਰਕਣਾ, ਕੰਨ ਘੋਸਲ ਮਾਰਨੀ**, ਕਣਕ ਨਾਲ ਘੁਣ ਵੀ ਪਿਸਣਾ, ਕੱਖ ਭੰਨ ਕੇ ਦੂਹਰਾਂ ਨਾ ਕਰਨਾ, ਕਲਮ ਦੇ ਧਨੀ ਹੋਣਾ, ਕਿਤਾਬੀ ਕੀੜਾ ਹੋਣਾ,** ਖ਼ਾਨਾ ਖ਼ਰਾਬ ਹੋਣਾ, ਖਾਨਿਓ ਜਾਣਾ, **ਖੂਹ ਨਿਖੁੱਟ ਜਾਣਾ,** ਗੁੱਡੀ ਚੜ੍ਹਨੀ, ਗਲ ਪੈਣਾ ,ਗੰਗਾ ਨਹਾਉਣਾ ,ਚੜ੍ਹ ਮੱਚਣੀ, ਚੰਦ ਚਾੜ੍ਹਨਾ, ਚਾਦਰ ਵੇਖ ਕੇ ਪੈਰ ਪਸਾਰਨਾ ,ਚਕਮਾ ਦੇਣਾ ,ਛੱਕੇ ਛੜਾਉਣਾ ,ਛਾਪਾ ਮਾਰਨਾ, ਛਿੱਲ ਲਾਉਣੀ ,ਛਿੱਕੇ ਟੰਗਣਾ

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

Punjab History and Culture (C. 320 to 1000 A.D.)
(Special paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)
Course Code: BSML-2431

Course Outcomes:

After completing Semester II and course on Ancient History of Punjab students will be able to understand:

CO 1: The reasons and impact of Alexander's invasions and to comprehend various factors leading to rise and fall of empires and emergence of new dynasties and their administration specifically of Maurya rule in general and Ashok in particular

CO 2: art and architecture of Gupta period and the Indo-Greek style of architecture under Gandhara School

CO 3: To have an insight into the socio-cultural history under Harshvardhan and punjab under the stated period

CO 4: To enable students to have thorough insight into the various forms/styles of Architecture and synthesis of Indo - Greek Art and Architecture in Punjab

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

Punjab History and Culture (C. 320 to 1000 A.D.)
(Special paper in lieu of Punjabi Compulsory)
(For those students who are not domicile of Punjab)
Course Code: BSML-2431

Examination Time: 3 Hours — Max. Marks: 100
Credits(L-T-P): 4-0-0 — Theory: 70
Contact Hours: 4 Hrs/Week — CA: 30

Instructions for the Paper Setter:

1. Question paper shall consist of four Units
2. Examiner shall set 8 questions in all by selecting Two Questions of equal marks from each Unit.
3. Candidates shall attempt 5 questions in 1000 words, by at least selecting One Question from each Unit and the 5th question may be attempted from any of the four Units.
4. Each question will carry 14 marks

Unit-I

1. Alexander's Invasion's and Impact
2. Administration of Chandragupta Maurya with special reference to reforms introduced by Ashok

Unit-II

3. The Kushans: Gandhar School of Art
4. Gupta Empire: Golden Period-Social and cultural life, Art and Architecture)

Unit-III

5. The Punjab under Harshvardhana-Society and Religion During the time of Harshvardhana
6. Socio-cultural History of Punjab from 7th to 1000 A.D.

Unit-IV

7. Development of Languages and Education with Special reference to Taxila
8. Development to Art and Architecture

Suggested Readings

- B.N. Sharma: *Life in Northern India*, Delhi. 1966
- Budha Parkash, *Glimpses of Ancient Punjab*, Patiala, 1983.
- L. M Joshi (ed), *History and Culture of the Punjab*, Art-I, Punjabi University, Patiala, 1989 (3rd edition)
- L.M. Joshi and Fauja Singh (ed.), *History of Punjab*, Vol.I, Punjabi University, Patiala, 1977.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (DIVERSITY OF NONCHORDATES- II) (ARTHROPODA - HEMICHAORDATA)
Course Code: BSML-2483
(THEORY)

Course Outcomes:

After passing this course the student will be able to:

CO1. Understand physiology and economic importance of cockroach and social organization of insects.

CO2. Gain knowledge about the general pattern of life history of phylum mollusca

CO3. Learn about life history and larval forms of Echinodermata

CO4. Gain knowledge about affinities of Hemichordates with Non-Chordates and Chordates

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (DIVERSITY OF NONCHORDATES- II) (ARTHROPODA - HEMICHAORDATA)
Course Code: BSML-2483
(THEORY)

Credits (L-T-P): 4-0-0 **Max Marks: 100**
Time: 3 Hours **Theory: 70**
CA: 30

Instructions for the Paper Setter

Eight questions of equal marks (14 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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-I

Arthropoda: Type study- *Periplaneta americana* (Cockroach),

Social organizations in insects (Honey bee and Termite)

UNIT-II

Mollusca: Type study-Pila globosa, Tortion, Pearl formation

UNIT-III

Echinodermata: Type study - Asterias (Star fish), Study of Echinoderm larvae

UNIT-IV

Hemichordata:Type study - Balanoglossus (External characters only). Affinities of Hemichordates with Non-Chordates and Chordates

Suggested Readings:

1. Barnes, R.D. (1999), Invertebrate Zoology. W.B. Saunder, Philadelphia.
2. Dhami, P.S. & Dhami, J. K., Invertebrates, R. Chand & Co., New Delhi, 2001.
3. Barth, R. H. and Broshears, R. E (1982), The Invertebrate world. Holt Saunder, Japan.
4. Brusca, R. C. and Brusca, G. J. (2003), Invertebrates (2nd ed), Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts.

5. Engemann, J. G. and Hegner, R. W. (1981), Invertebrate Zoology (3rd ed), Macmillan, New York.
6. Gardiner, M. S. (1972), The Biology of Invertebrates, McGraw Hill, New York.
7. Meglitsch, P. A. and Schran, F. R. (1991), Invertebrate Zoology (3rd ed), Oxford University Press, New York.
8. Pechenik, A. Jan. (2000), Biology of the invertebrates, (4th ed), McGraw Hill Book Co. Singapore.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (NONCHORDATES- II LAB)
Course Code: BSMP-2483
(PRACTICAL)

Course Outcomes:

After passing this course the student will be able to:

CO1. Know about the morphological, physiological & behavioural adaptations of different animals in different habitats.

CO2. Familiarise with the classification & ecology of invertebrates.

CO3. Identify different zoogeographical realms with fauna.

CO4. Know about the different nest of birds.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (NONCHORDATES- II LAB)
Course Code: BSMP-2483
(PRACTICAL)

Credits (L-T-P): 0-0-2 **Max Marks: 50**
Time: 3 Hours **Practical: 35**
CA: 15

Instructions for the Practical Examiners:

Question paper is to set on the spot jointly by the Internal and External Examiners. Two copies of the same should be submitted for the record to COE Office, Kanya Maha Vidyalaya, Jalandhar

1. **Classification up to order level with ecological notes and economic importance (if any) of the following animals:**

Arthropoda: Peripatus, Palaemon (prawn), Lobster, Cancer (crab), Sacculina, Eupagurus (hermit Crab), Lepas, Balanus, Cyclops, Daphnia, Lepisma, Periplaneta (cockroach), Schistocerca (locust), Poecilocerus (ak grasshopper), Gryllus (cricket), Mantis (praying mantis), Cicada, Forficula (earwig), Dragonfly, Termite queen, Bug, Moth, Beetles, Polistes (wasp), Apis (honey bee), Bombyx, Pediculus (body louse) Millipede and Centipede, Palamnaeus (scorpion), Aranea (spider) and Limulus (king Crab).

Mollusca: Anodonta, Mytilus, Ostrea, Cardium, Pholas, Solen (razor fish), Pecten, Haliotis, Patella, Aplysia, Doris, Limax, Loligo, Sepia, Octopus, Nautilus shell (Complete and T.S.), Chiton, Dentalium.

Echinodermata: Asterias, Echinus Ophiothrix, Antedon.

Hemichordata: Balanoglossus.

2. **Study of the following permanent stained preparations:**

Trachea and mouth parts of Insects

Radula and osphradium of Pila

T.S. Star fish (Arm).

3. **Demonstration of digestive and nervous systems of *Periplaneta* (cockroach) with the help of charts/models/videos.**

4. **Assignment**

Note:- Some changes can be made in the practicals depending on the availability of material.

Guidelines for conduct of practical Examination:-

1.	Identify and classify the specimens upto order level. Write a note on their habit, habitat, special features and economic importance.	**7**
2.	Draw a well labelled sketch of the given system of the animal & explain it to the examiner.	**5**
3.	Identify the slides/models and give two reasons for identification.	**5**
4.	Identify the adaptive feature/nest.	**3**
5.	Assignment	**5**
6.	Viva-voce & Practical file.	**10**

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

CHEMISTRY (ORGANIC CHEMISTRY-I: Hydrocarbon and Alkyl Halides)
Course Code: BSML-2084
(THEORY)

Course outcomes:

Students will be able to

CO1: interpret the bonding, hybridization between different organic compounds, explain the various reaction mechanisms and different electron displacement effects

CO2: interpret the reactions and properties of alkanes, alkenes & alkynes, derive the electrophilic, nucleophilic addition reactions, free radical mechanisms of halogenation of alkanes.

CO3: differentiate between aromatic, anti-aromatic and non-aromatic compounds, explain the effect of various substituents on the reactivity of aromatic compounds

CO4: learn about the basic chemistry of organic compounds along with methods of formation and reactions of alkyl halides and their derivatives.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

CHEMISTRY (ORGANIC CHEMISTRY-I: Hydrocarbon and Alkyl Halides)
Course Code: BSML-2084
(THEORY)

Exam Time: 3Hrs. **Max. Marks: 100**
Credits (L-T-P): 4-0-0 **Theory: 70**
CA: 30

Instructions for the Paper Setters: Eight questions of equal marks (Fourteen marks each) are to be set, two in each of the four Sections (A-D). Questions may be subdividedinto 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.

SECTION-A

Hybridization, Use of arrows, Types of reagents, Reactive Intermediates: Carbocations, Carbanions, Free radicals Carbenes, arenes and Nitrenes. Stereochemistry: Fischer Projection, Newmann and Sawhorse Projection formulae and their interconversions, Geometrical isomerism, E/Z notations with C.I.P rules, Optical Activity, enantiomeric and diastereomeric excess, Chirality/Asymmetry, Enantiomers, Diastereoisomers, Racemic mixture and resolution, optical activity in absence of chiral carbon, Relative and absolute configuration: D/L and R/S designations

SECTION-B

Chemistry of alkanes: methods of formation of alkanes, Free radical substitutions: Halogenation -relative reactivity and selectivity. Cycloalkanes and Conformational Analysis: Baeyer strain theory, Conformation analysis, relative stability and energy diagrams of ethane, propane, butane, cyclohexane and Chair, Boat and Twist boat forms of cyclohexane.

Chemistry of alkenes/alkynes: Nomenclature and Formation of alkenes and alkynes, Mechanism of E1 and E2 reactions, Saytzeff and Hofmann eliminations. Mechanisms and Reactions of alkenes, reduction, syn and anti-hydroxylation (oxidation), 1, 2- and 1,4-addition reactions in conjugated dienes and Diels-Alder reaction, mechanism of allylic and benzylic bromination. Reactions of alkynes.

SECTION-C

Aromaticity: Huckel's rule, Structure of benzene: Molecular formula and Kekule structure. Stability and C-C bond lengths of benzene, resonance structure. Aromatic electrophilic substitution–general pattern of the mechanism, role of σ and π complexes. Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel Crafts reaction. Energy profile diagrams. Activating and deactivating substituents, reactivity and orientation of disubstitution. Side chain reactions of benzene derivatives. Methods of formation and chemical reactions of alkylbenzenes.

SECTION-D

Alkyl halides: Methods of preparation, details of nucleophilic substitution reactions – SN1, SN2 and SNi mechanisms with stereochemical aspects and effect of solvent, nucleophilic substitution vs. elimination. Aryl halides: Preparation, including preparation from diazonium salts, nucleophilic aromatic substitution in details; SNAr, Benzyne mechanism. Relative reactivity and mechanism of alkyl, allyl/benzyl, vinyl and aryl halides towards nucleophilic substitution reactions in detail.

Books suggested

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Solomons, T. W., Fryhle, C.B., Organic Chemistry; 9th edition, Pubs: Wiley India, 2007.
4. Wade Jr., L.G., Singh, M.S., Organic Chemistry; 6th edition, Pubs: Pearson Education, 2008.
5. Fundamentals of Organic Chemistry, Solomons, John Wiley.
6. Introduction to Organic Chemistry, Sireitwieser, Heathcock and Kosover, Macmilan.
7. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
8. McMurry, J. E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.
9. Eliel, E. L. & Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London,1994.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

CHEMISTRY (ORGANIC CHEMISTRY-I: Lab Functional Group Analysis)
Course Code: BSMP-2084
(PRACTICAL)

Course outcomes:

Students will be able to analyze the given organic compound through

CO1: understand the basics of Qualitative analysis

CO2: detection of elements (N, S and halogens) in organic compounds.

CO3: detection of functional groups (phenolic, carboxylic, carbonyl, esters, carbohydrates, amines, amides, nitro and anilide) in simple organic compounds

CO4: preparation of their derivatives

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

CHEMISTRY (ORGANIC CHEMISTRY-I: Lab Functional Group Analysis)
Course Code: BSMP-2084
(PRACTICAL)

Time: 3 Hrs **Marks: 50**

Credits (L-T-P): 0-0-2 **Practical: 35**

CA: 15

Basic techniques on purification of organic compounds. Determination of melting point and boiling point of organic compounds. Detection of nitrogen, halogens and sulphur in organic compounds. Qualitative analysis of unknown organic compounds containing simple functional groups.

Books Suggested

1. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. Practical Organic Chemistry, 5 th Ed. Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: QualitativeAnalysis, University Press (2000).

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (CELL BIOLOGY AND GENETICS)
Course Code: BSML-2075

Course outcome:

After passing this course the course the student will be able to: -

CO1: Explain the structure of cell and organelles associated with it.

CO2: Understand cellular envelopes and their functions.

CO3: Understand the chemical basis of hereditary material i.e., DNA., Mitosis, Meiosis and gene interactions

CO4: Understand different methods of gene expression in prokaryotes and eukaryotes AND various methods of genetic mutation and variations in living beings.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (CELL BIOLOGY AND GENETICS)
Course Code: BSML-2075

Time: 3 Hrs. **Max. Marks: 100**
Credits (L-T-P): 4-0-0 **Theory: 70**
C.A.:30

Instructions for the Paper Setters:-

Eight questions of equal marks (14 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.

SECTION–A

Nucleus: Ultrastructure; nuclear membrane; nucleolus; nucleoid in prokaryotes. Histone proteins: structure and function, Extra nuclear Genome: mitochondrial and plastid DNA; plasmids. Structure and function of cellular organelles

The Cell Envelopes: Ultra structure of plasma membrane: bi-layer lipid structure, extrinsic and intrinsic proteins, functions. Ultra structure of cell wall, cell wall composition and its functions.

SECTION–B

DNA the Genetic Material: DNA structure and its types (A, B, Z DNA); replication; DNA–protein interaction; the nucleosome model; genetic code; satellite and repetitive DNA, Cell Division: Mitosis; meiosis.

SECTION–C

Genetic Inheritance: Mendelism; laws of segregation and independent assortment; linkage analysis; Incomplete dominance and co-dominance, multiple alleles, lethal alleles, epistasis, pleiotropy, penetrance and expressivity, polygenic inheritance.

SECTION–D

Gene expression: Structure of gene; transfer of genetic information; transcription, translation, protein synthesis, tRNA; ribosomes; regulation of gene expression in prokaryotes and eukaryotes.

Genetic Variations: Mutations, spontaneous and induced; transposable genetic elements; DNA, damage and repair

Suggested Readings:-

1. Gupta, P.K. (2013). A Text–book of Cell and Molecular Biology (3rd edition). Rastogi Publications, Meerut, India

2. Johnson, A., Raff, L. and Walter, R. (2008). Molecular Biology of the Cell (5th Edition). Taylor and Francis Group, USA.

3. Karp, G. (2013). Cell and Molecular Biology: Concepts and Experiments (7th Edition). Wiley Publishers, USA.

4. Kleinsmith, L.J. and Kish, V.M. (1995). Principles of Cell and Molecular Biology (2nd edition). Harper Collins College Publishers, New York, USA.

5. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M., Bretscher, A. and Ploegh, H. (2016). Molecular Cell Biology, W.H. Freeman & Co., New York, USA.

6. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics (5th Edition). John Wileyand Sons Inc., U.S.A.

7. Brown, T.A. (2011). Genetics: A Molecular Approach (3rd Edition). BIOS Scientific Publishers, UK.

8. Fletcher, H., Hickey, I. and Winter, P. (2010). Instant Notes on Genetics (3rd edition) Taylor and Francis Group, USA.

9. Gardner, E.J., Simmons, M.J. and Snustad, D.P. (2012). Principles of Genetics (8th Edition). Wiley Sons, USA.

10. Gupta, P.K. (2016). Cell and Molecular Biology, Rastogi Publications, Meerut, India.

11. Kleinsmith, L.J. and Kish, V.M. (1995). Principles of Cell and Molecular Biology (2nd Edition). Harper Collins College Publishers, New York, USA.

12. Krebs, B. E., Goldstein, E.S. and Kilpatrick, S.T. (2011). Lewins Genes X. Jones and Bartlett Publishers, LLC, UK.

13. Lodish, H., Berk, A., Kaiser, C. A., Krieger, M., Bretscher, A. and ploegh, H. (2016). Molecular Cell Biology, W.H. Freeman & Co., New York, USA.

14. Singh, B.D. (2007). Molecular Genetics. Kalyani Publishers, India.

15. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics (5th Edition). John Wileyand Sons Inc., U.S.A.

16. Fukui, K. and Nakayama, S. (1996). Plant Chromosomes; Laboratory Methods, CRC Press, Boca Raton, Florida.

17. Gunning, B.E.S. and Steer, M.W. (1996). Plant Cell Biology; Structure and Function, Jones and Barllett Publishers, Boston, Massachusetts.

18. Harns, N. and Oparka, K.J. (1994). Plant Cell Biology, A Practical Approach. IRL Press, at Oxford University Press, Oxford, UK.

19. Sharma, A.K. and Sharma, A. (1999). Plant Chromosomes; Analysis. Manipulation and Engineering, Harwood Academic Publishers, Australia.

20. Plopper, G. (2016). Principles of Cell Biology. Jones and Barnett Learning, Boston, Massachusetts.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (CELL BIOLOGY AND GENETICS LAB)
(PRACTICAL)

Course Outcome

After passing this course the student will be able to:

CO1: Study of cell structure and plastids examination.

CO2: Understand microscopic structure of cell through light microscope and electron micrograph.

CO3: Evaluate methodologies in the design of genetics experimental procedures.

CO4: Analyze special chromosome types and apply inheritance laws using genetic data.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (CELL BIOLOGY AND GENETICS LAB)
(PRACTICAL)

Time: 3 Hrs **Max. Marks: 50**
Credits (L-T-P):0-0-2 **Theory: 35**
C.A.:15

Suggested Laboratory Exercises

1. To study cell structure from onion leaf peels; demonstration of staining and mounting methods.
2. Comparative study of cell structure in onion cells, *Hydrilla* and *Spirogyra*. Study of cyclosis in *Tradescantia* Staminal Cells.
3. Study of plastids to examine pigment distribution in plants (e.g. *Cassia*, *Lycopersicon* and *Capsicum*).
4. Examination of electron micrographs of eukaryotic cells with special reference to organelles.
5. Study of electron micrographs of viruses, bacteria, cyanobacteria and eukaryotic cells for comparative cellular organization.
6. Examination of various stages of mitosis and meiosis using appropriate plant material (e.g. onion root tips, onion flower buds).
7. Cytological examination of special types of chromosomes: bar body, lampbrush and polytene chromosomes.
8. Working out the laws of inheritance using seed mixtures.
9. Working out the mode of inheritance of linked genes from test cross and/or F2 data.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

CHEMISTRY (From Molecules to Markets: Entrepreneurship in Chemistry)
Course Code: BSMM-2084

Exam Time: 3Hrs. **Max. Marks: 100**
Credit (L-T-P): 2-0-1 **(Theory: 50, Practical:20, CA:30)**

Instructions for the Paper Setters: Eight questions of equal marks (Eight 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

Cleaning agents

Soaps and detergents: Types (cationic and anionic), physical and chemical characteristics, advantages and disadvantages. Examples of Commercially available cleaning agents (shampoo, hand wash, face-wash)

Unit 2

Disinfectants
Introduction, types, physical and chemical properties, classification (acids, alcohols, aldehydes, alkalis, halogens, phenols)
Sanitizers
Sanitizers-Introduction, types, raw material used in making professional hand sanitizer with properties, WHO recommendations for hand sanitizers.

Unit 3

Cosmetics
Oils, fats, and waxes - Introduction, physical and chemical properties, their use in cosmetics, Preservatives-Introduction, properties, types and their significance.

Unit 4

Transition to Greener approach
Importance and Principles of Green Chemistry, bio-enzymes as disinfectants, green cosmetics-make up, shampoo, face pack, face mask, lipsticks.

Practicals:

1. Preparation of Soaps.
2. Preparation of liquid detergent using animal fat.

3. Preparation of Hand-Sanitizers.
4. Preparation of Disinfectants.
5. Preparation of cleaning agents using bio-enzymes.

Books Suggested :

1. New Cosmetic Science by Takeo Mitsui
2. Cosmetic Science and Technology by Sargin C.B
3. Surfactants in personal care products and decorative cosmetics-Third edition by Linda D. Rhein, Anthony O'Lenick.
4. Handbook on Synthetic detergents by B.P. Sen.
5. Liquid Detergents, 2nd Edition by Kuo-Yann Lai.
6. Soap-Making Manual A Practical Handbook on the Raw Materials, Their Manipulation, Analysis and Control in the Modern Soap Plant (E-Book) by Mylene Stedmen.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (AQUACULTURE)
Course Code: BSMM-2483
(THEORY)

Course outcomes:

After completion of course students will be able to:

CO1: Identify commercially important fishes and exotic fishes.

CO2: Develop basic technical skills necessary for work in different cultures, integrated aquaculture systems and other cultural practices

CO3: Understand artificial breeding technique, induced spawning, brood stock maintenance, larval rearing and grow out systems.

CO4: Apply the knowledge of diseases in-fish culture and marketing of fish.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (AQUACULTURE)
Course Code: BSMM-2483
(THEORY)

Credits: 2-0-0 **Max Marks: 100**
Time: 3 Hours **Theory: 50**
CA: 30

Instructions for the Paper Setter

Eight questions of equal marks (8 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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-I

Morphology of fish (carp, cat-fish, freshwater eel, perch).

Exotic fishes: Introduction, important species, their role in fish culture, impact on fish fauna

UNIT- II

Culture Systems: Conventional, Extensive, Intensive, Monoculture and Polyculture, cage culture. Integrated fish farming (with Duckry, poultry, piggery, dairy and paddy).

Sewage fed fishery.

UNIT- III

Pond culture: Construction of pond, Types of pond, Management of pond (Pre-stocking, stocking and post stocking).

Induced Breeding of fish (Methodology and impact on fish culture).

UNIT- IV

Important Diseases (Viral, Bacterial, Fungal, Helminthes, Crustacean) and their control.

Fish products and by-products.

Marketing of Fish and Preservation of fish.

Suggested Readings:

1. Aggarwal S.C. & Johal M.S., Fishery Development, Narendra Publishing House, Delhi.
2. Jayaram, K.C. (1981), the freshwater fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka-A Hand Book of Zoological Survey of India, Kolkatta.
3. Jhingran V.G. (1991), Fish and Fisheries of India, Hindustan Publishing Corporation of India, Delhi.

4. Johal M.S. & Tandon K.K. (1979,1980), Monograph on the Fishes of reorganized Punjab, (Vol. I & II), Punjab.
5. Johal M.S. & Tandon K.K. (1981), Fisheries of Punjab, Res. Bull, Panjab University, Vol. 32, pp. 143-154.
6. Legler Karl F (1962), Freshwater Fishery Biology, Wm. C-Brown Co. Dublingus IOWA, USA.
7. Munshi, J.S.D and Datta, H.M. (1996), Fish Morphology- Horizons of New Research, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
8. Rath R.K. (1993), Freshwater Aquaculture, Scientific Publishers, Jodhpur.
9. Tandon K.K. and Johal M.S. (1996), Age and Growth of freshwater fishes in India, Narendra Publishing House, New Delhi.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (AQUACULTURE LAB)
Course Code: BSMM-2483

Course outcomes:

After completion of course students will be able to:

CO1: Know the suitable cultivable fish species in reservoir.

CO2: Understand different types of inland resources and methods to manage these utilized water bodies.

CO3: Impart basic understanding of the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms.

CO4: Learn about basics of the aquaculture in field

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

ZOOLOGY (AQUACULTURE LAB)
Course Code: BSMM-2483

Credits(L-T-P): 0-0-1
Time: 2 Hours **Practical: 20**

1. Morphology of a Carp, Cat fish and Perch.
2. Identification of the following fishes using key: *Notopterus spp.; Labeo rohitta, L. bata, Cirrhinus mrigala, Catla catla, Puntius sarana, Tor putitora, Schizothorex, Aorichthys seenghala, Wallago attu, Callichrous padda, Bagarius bagarius, Heterpneustus fossilis, Channa marulius, C. Striatus, Xenetondon cancila, Cyprinus carpio,Hypophthalamichthys molitrix, Ctenopharyngodon idella, Colisa fasciatu and Mastacembelus armatus*.

   For the identification of these fishes, the candidate can use already prepared keys or they can prepare their own keys.
3. Determination of feeding habits of the fish from the position of mouth.
4. To observe the seasonal changes in the gonads during different phases of the reproductive cycle.
5. Identification of aquatic weeds of a fish pond.
6. Estimation of following physico-chemical parameters of pond water:
   1. Temperature
   2. pH
   3. Dissolved oxygen
   4. Phosphates
   5. Total Dissolved solids
   6. Nitrates
   7. Hardness
   8. Examination of diseased fishes
7. Visit of fish farm and preparation of report.

Note: Some changes can be made in the practicals depending on the availability of material.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (Medicinal Botany)
Course Code: BSMM -2070

Course Outcomes:

After completion of course students will be able to:

CO1: Understand the historical significance and foundational concepts of Ayurveda, Siddha, and Unani medicinal systems.

CO2: Identify and conserve endangered and endemic medicinal plants.

CO3: Acquire skills in the propagation techniques of medicinal plants.

CO4: Explore ethnobotany and its application in traditional and modern medicine.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (Medicinal Botany)
Course Code: BSMM -2070

Time: 3 Hrs. **Max. Marks: 100**
Theory: 50
C.A.: 30

Credits (L-T-P): 2-0-0
Instructions for the Paper Setters:

Eight questions of equal marks (Specified in the syllabus) 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.

SECTION-A

1. History, Scope and Importance of Medicinal Plants: Indigenous Medicinal Sciences; Definition and Scope-*Ayurveda*: History, origin, *panchamahabhutas*, *saptadhatu* and *tridosha* concepts, *Rasayana*, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept: *Umoor-e- tabiya*, tumors treatments/ therapy, polyherbal formulations.

SECTION-B

2. Conservation of endangered and endemic medicinal plants: Definition; Endemic and Endangered medicinal plants, Red list criteria; *In situ* conservation: Biosphere reserves, sacred groves, National Parks; *Ex situ* conservation: Botanical Gardens.

SECTION-C

3. Propagation of Medicinal Plants: Objectives of the nursery, its classification, important components of a nursery, sowing, pricking, use of green house for nursery production, propagation through cuttings, layering, grafting and budding.

SECTION-D

4. **Ethnobotany and Folk medicines:** Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany: National interacts, Palaeo-ethnobotany, folk medicines of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India. Application of natural products to certain diseases- Jaundice, cardiac, infertility, diabetics, Blood pressure and skin diseases.

Suggested Readings

1. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.

2. Dhaduk, H. L, 2016, Medicinal Plants: Cultivation and Uses. India: DAYA Publishing House.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (Medicinal Botany Lab)
Course Code: BSMM -2070

Course Outcomes:

After completion of course students will be able to:

CO1: Gain practical experience in identifying and studying medicinal and aromatic plants.

CO2: Learn techniques for harvesting, drying, processing, and storing medicinal plants.

CO 3: Develop skills in extracting essential oils and analyzing secondary metabolites.

CO4: Explore and document local ethnobotanicals and traditional ethnomedicinal practices in India.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

BOTANY (Medicinal Botany Lab)
Course Code: BSMM -2070

Time: 2 Hrs.

Practical: 20

Credits (L-T-P): 0-0-1

Suggested Laboratory Exercises

1. To visit the nurseries for the study of medicinal and aromatic plants.

2. To visit Botanical Garden and Herbal Garden for the identification of Medicinal Plants.

3. To study harvesting, drying, grading, storage, processing techniques for medicinal and aromatic plants.

4. Collection and Identification of locally used ethnobotanicals.

5. To extract essential oils from aromatic plants by hydrodistillation method.

6. To study major ethnomedicinal plants and practices followed in India.

7. Qualitative analysis of secondary metabolites from plant sample.

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

Drug Abuse: Problem, Management and Prevention

Course Outcomes: AECD-2161

Course Outcomes:

After completing the course the students will be able to:

CO1. Learn how to include factual data about what substance abuse is; warning signs of addiction; information about how alcohol and specific drugs affect the mind and body;

CO 2. Focus on substance abuse education- is teaching individuals about drug and alcohol abuse and how to avoid, stop, or get help for substance use disorders.

CO3. Learn how to be supportive during the detoxification and rehabilitation process

CO 4. Understand that substance abuse education is important for students alike; there are many misconceptions about commonly used legal and illegal substances, such as alcohol and marijuana

Bachelor of Science (Medical/Honours) Semester–II (Session 2024-25)

Drug Abuse: Problem, Management and Prevention

Course Outcomes: AECD-2161

Time: 3Hrs **Max. Marks: 50**

Theory: 35

Credits (L-T-P): 2-0-0 **CA: 15**

Contact Hours: 2 Hrs/ Week

Instructions for the Paper Setter:

Eight questions of equal marks (8 marks each) are to be set, two in each of the four Sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. 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-I

Meaning of Drug Abuse:

(i) Meaning, Nature, Types and Extent of Drug Abuse in India and Punjab.
(ii) Consequences of Drug Abuse for:
Individual: Education, Employment, Income.
Family: Violence.
Society: Crime, Social Disorganization

UNIT-II

MANAGEMENT OF DRUG ABUSE:

(i) Medical management: medication for treatment and to withdrawal effects.
(ii) Psychiatric Management: Counseling, Behavioral and Cognitive therapy.

UNIT-III

Prevention of Drug abuse:

(i) Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active Scrutiny.
(ii) School: Counselling, Teacher as role-model. Parent-teacher-Health Professional Coordination, Random testing on students

UNIT-IV

Controlling Drug Abuse:

(i) Legislation: NDPs act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, Time bound trials

Suggested Readings:

1. Ahuja, Ram (2003), *Social Problems in India*, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India,2004.
3. Inciardi, J.A. 1981. *The Drug Crime Connection.*Beverly Hills: SagePublications.
4. Kapoor. T. (1985) *Drug epidemic among Indian Youth*, New Delhi: MittalPub.
5. Modi, Ishwar and Modi, Shalini (1997) *Drugs: Addiction and Prevention*, Jaipur: Rawat Publication.
6. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences,2004.
7. Sain, Bhim 1991, *Drug Addiction Alcoholism,* Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, *Drug Addiction in Punjab*: A Sociological Study. Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. *Alcohol and Dependence among Industrial Workers*: Delhi: Shipra.
10. Sussman, S and Ames, S.L. (2008). *Drug Abuse: Concepts, Prevention and Cessation,*Cambridge University Press.