Subject name : Pathology and Microbiology

Subject code: HomUG-Path-M

1. **Preamble**

Pathology and Microbiology provide comprehensive knowledge of the pathologic basis of disease, to enable a complete understanding of the reaction of man to different morbid factors causing disease -its natural course, clinical manifestations, complications and sequel.

The students must be able to discriminate symptoms of the patient & disease satisfying the Hahnemannian requirements of physicians as mentioned in aphorism 3 of Organon of Medicine, make them competent in diagnosis and to substantiate miasmatic perspective with pathology for an accurate homoeopathic prescription.

Knowledge also helps in deciding the scope, limitation and prognosis of a case through the understanding of susceptibility. Immune-mediated illnesses are becoming important areas where homoeopathic interventions can play a significant part in alleviating suffering and in bringing about a cure. The teaching should be aligned and integrated vertically in organ systems recognizing deviations from normal structure and function and clinically correlated to provide an overall understanding of the aetiology, mechanisms, laboratory diagnosis and management of diseases and horizontally with Homoeopathic Philosophy, Homoeopathic Materia Medica and Repertory to understand the Homeopathic concept of Disease and its management. Pathology will need alignments with Anatomy and Physiology on one side and clinical subjects on the other side with the foundation of homoeopathic subjects.

2. **Course outcomes**

At the end of the II BHMS course the students will be able to:

1. Recognize the importance of study ofPathology and Microbiology in Homoeopathic systemof medicine
2. Understandthe morphological changes in cell structure in disease and recognize the mechanism of the etiological factors in the causation of such changes
3. Integrate the study of Pathology and Microbiology with Homoeopathic philosophy, Materia Medica, and Repertory.
4. Understand classification of diseases as per Master Hahnemann.
5. Understand common and important diseases based on their evolution, aetio-pathogenesis, pathology, progress and prognosis.
6. Develop skill in the identification of pathological features specifically histo-pathological features, and gross pathological specimens.
7. Able to interpret laboratory reports for diagnosis and treatment purpose.
8. Develop a positive attitude towards the role of Pathology and Microbiology in Homoeopathic system

3. Course content and its term-wise distribution

3.1 Contents for Term I

Theory	
Sr. No.	**Topic**
1.	Introduction to Pathology
2.	General Pathology
3.	Introduction to Microbiology
4.	Sterilisation and Disinfection
5.	Culture medias and methods
6.	Infection and Disease
7.	Human Microbiome
8.	Gram positive bacterias
9.	Introduction to Virology
10.	Introduction to Parasitology
11.	Protozoans
Non –lecture- Practical/Demonstrative	
1.	Demonstration of Instruments
2.	Demonstration of Methods of sterilisation

3.	Demonstration of culture medias
4.	Estimation of haemoglobin
5.	Total count of Red Blood Cells
6.	Total count of White Blood Cells
7.	Bleeding time and clotting time
8.	Blood grouping.
9.	Gram staining
10.	Demonstration of histopathological slides
11.	Demonstration of Pathological specimen/models

3.2 Contents for Term II

Theory	
Sr. No.	**Topic**
1.	Systemic Pathology
2.	Gram negative bacterias
3.	Acid fast bacterias
4.	Spirochaetes
5.	Virology-DNA,RNA virus

6.	Parasitology –Helminths
7.	Mycology
8.	Diagnostic procedures in Microbiology
Non –lecture- Practical/Demonstrative	
1.	Staining of thin and thick films.
2.	Differential count.
3.	Erythrocyte sedimentation rate-demonstration
4.	Urine examination-physical,chemical and microscopical examination.
5.	Examination of Faeces- demonstration
6.	Hanging drop preparation.- demonstration
7.	Acid fast staining –demonstration
8.	Interpretation of laboratory reports (serological tests, LFT, RFT, TFT etc) and its clinico pathological correlation
9.	Demonstration of common pathological specimens/models from each system
10.	Demonstration of common Pathological slides from each system

4. Teaching hours

4.1 Gross division of teaching hours

Pathology & Microbiology		
Year	**Teaching hours- Lectures**	**Teaching hours- Non-lectures**
II BHMS	200	80

4.2 Teaching hours theory

Sr. No	Topic	Hours
	Paper I	
1.	Introduction	3
	General Pathology	
1.	Cell Injury and cellular adaptation	10
2.	Inflammation and repair	10
3.	Neoplasia	10
4.	Immunopathology	8
5.	Haemodynamic disorders	10
6.	Environmental and Nutritional diseases	2

	Systemic Pathology	
1.	Diseases of the Haematopoietic system, bone marrow and blood	9
2.	Diseases of the Respiratory system.	5
3.	Diseases of the the oral cavity,salivary glands and gastro intestinal tract	6
4.	Diseases of liver, gall bladder, and biliary ducts	4
5.	Diseases of the Pancreas	1
6.	Diseases of blood vessels and lymphatics	2
7.	Diseases of Cardiovascular system	5
8.	Diseases of kidney and lower urinary tract	6
9.	Diseases of male reproductive system and prostate	1
10.	Diseases of the female genitalia and breast	4
11.	Diseases of the skin and soft tissue	1
12.	Diseases of the musculo-skeletal system.	2
13.	Diseases of Endocrine glands -thyroid	2
14.	Diseases of nervous system	1
	Total	**102**

	Paper II	
	Microbiology and Parasitology	
1.	General introduction, Bacterial structure, growth and metabolism & genetics	3
2.	Identification and cultivation of bacteria(staining, culture medias, methods)	3
3.	Sterilization and disinfection	2
4.	Infection and disease	2
5.	Gram positive cocci	5
6.	Gram negative cocci	2
7.	Gram positive aerobic bacilli	2
8.	Gram positive anaerobic bacilli	3
9.	Gram negative bacilli	9
10.	Acid Fast Bacterias	4
11.	Spirochaetes	3
12.	Fungi- general characters- cutaneous, systemic mycosis, opportunistic	3
13.	Introduction to parasitology	2
14.	Protozoans	9
15.	Helminths –cestodes, trematodes and nematodes	14
16.	Virology-introduction &,Bacteriophges	2
17.	DNA virus	11
18.	RNA viruses	12
19.	Emerging and re-emerging diseases	2
20.	Human Microbiome- homoeopathic concept	3
21.	Diagnostic procedures in Microbiology	2
	Total	**98**

4.3 Teaching hours Non-lecture

Sl. No.	Practicals	60 hrs
1.	Demonstration of common and latest equipments used in pathology and microbiology laboratory	4
2.	Estimation of haemoglobin (by acidometer)	2
3.	Total count of Red Blood Cells	2
4.	Total count of White Blood Cells,	2
5.	Bleeding time and Clotting time.	2
6.	Blood grouping.	2
7.	Staining of thin and thick films- demonstration	2
8.	Differential count of WBC	2
9.	Erythrocyte sedimentation rate -demonstration	2
10.	Urine examination physical, chemical and microscopical examination.	4
11.	Examination of Faeces- demonstration of physical, chemical (occult blood)and microscopical for ova and protozoa.	2
12.	Demonstration of Methods of sterilisation	2

13.	Common culture medias- demonstration	1
14.	Gram staining	2
15.	Acid fast staining – demonstration	2
16.	Hanging drop preparation.- demonstration	2
17.	Interpretation of laboratory reports (serological tests, LFT, RFT, TFT etc) and its clinico pathological correlation.	5
18.	Demonstration of common pathological specimens/models	10
19.	Demonstration of common histopathological slides	10
	Demonstrative Activities	**20**
1.	Seminar/tutorials/ Symposium	8
2.	PBL/CBL	6
3.	Group discussion	6