Lesson plan

Discipline : DMLT

Semester : 3rd

Subject : Histopathology and cytology-I

Lession Plan Duration: 15 weeks (from October, 2021 to January, 2022)

Work load (Lecture / practical) per week (n hours) = Lecture=3, Practical=6

WORK	THEORY		Practical	
	Lecture Day	**Topic (Including assignment/test}**	**Practical Day**	**Topic**
1st	1	Introduction and definition of: Histology, Histopathology Biopsy, Autopsy, Autolysis, Putrefaction	L1	Reception of specimen, labeling and preserving the specimen
	2	Tissue Preparation method Unfixed Tissue preparations: Imprint methods, Teased preparation		
	3	Unfixed Tissue preparations: Squashed preparation, Frozen section		
	4	Fixed Tissue preparations: Paraffin embedding,Celloidin embedding, Gelatin embedding		
2nd	5	Reception of Specimen: Reception, recording, labeling and preservation of histological specimen	L2	Preparation of different fixatives with special emphasis on preparation of formaline based fixatives
	6	Introduction about Fixation		
	7	Classification of fixatives: 1 Simple fixative		
	8	2 Compound fixative		
3rd	9	Composition of various fixatives	L3	Preparation of paraffin blocks from various tissue pieces and labeling with emphasis on orientation
	10	Advantages and disadvantages of fixtaive		
	11	Introduction about Tissue Processing		
	12	Different steps of tissue processing: Dehydration		

		Clearing/Dealcoholization		
4th	13	Infilteration and impregnation Paraffin embedding	L4	Handling of microtome
	14	Introduction about automatic tissue processor		
	15	automatic tissue processor types		
	16	automatic tissue processor working, care and maintenance		
5th	17	Test	L5	Sharpening of microtome knives
	18	Introduction about Microtomy and Microtome		
	19	Types of microtome(sliding,base sledge, rocking)		
	20	Types of microtome(rotary,freezing,cryostat,ultra)		
6th	21	Advantages and disadvantages of microtome	L6	Preparation of blocks for fine cutting - Rough cutting - Trimming
	22	care and maintenance of microtome		
	23	Microtome Knives(planoconcave,wedge,bioconcave,edge)		
	24	Sharpening of knives - Honing technique - Stropping technique		
7th	25	Automatic knife sharpener – uses, care and maintenance - Uses of abrasives and lubricants	L7	Practice of fine section cutting
	26	Introduction to disposable blades - their advantages and disadvantages.		
	27	Section Cutting 1 Rough cutting 2 Fine cutting		
	28	Use of tissue floatation bath		
8th	29	Use of various adhesive media and lifting of sections to the slide	L8	Practice of lifting of sections on the slides
	30	Errors /cutting faults in sections and their remedies		
	31	Introduction about staining: Principle and mechanism of routine stain		

	32	Various steps of staining ((Haematoxylin and Eosin) - Deparaffinization - Hydration - Nuclear Staining - Differentiation		
9th	33	- Blueing - Counterstaining - Dehydration - Clearing and Mounting - Results	L9	Performing H&E staining on sections and mounting of tissue sections
	34	Use of automatic stainer and coverslipper		
	35	Assignment		
	36	Introduction about Mountants Various types of mounting media 1 Aqueous mounting media		
10th	37	2 Resinous mounting media Advantages and Disadvantages mounting media	L10	Demonstration of cell using buccal smear/urine sample
	38	Terms associated with staining (04 hrs) Solvents Mordants		
	39	Metachromasia Accelerators		
	40	Progressive and regressive staining		
11th	41	Use of controls in staining and their significance	L11	Processing of urine samples for malignant cells
	42	Introduction about Cell (02 hrs) Defination and function of cell		
	43	Cell Structure and Multiplication(Mitosis and Meiosis)		
	44	Assignment		
12th	45	Introduction about Exfoliative Cytology	L12	Processing of sputum sample for malignant cytology
	46	Preparation of vaginal & cervical smears		
	47	Urine Collection and Processing of specimen for cytology		
	48	Sputum Collection and Processing of specimen for cytology		

13th	49	CSF (Cerebro Spinal Fluid) Collection and Processing of specimen for cytology	L13	To perform PAP stain on given smear
	50	Itroduction about Cytological Specimen Fixation		
	51	Various types of Cytological fixatives		
	51	Advantages and Disadvantages		
14th	53	Introduction about Cytological Staining	L14	To perform MGG& H&E stain on given smear
	54	Principle, Technique and interpretation of results in - Papanicalaou staining		
	55	Principle, Technique and interpretation of results in - May Grunwald & Giemsa staining		
	56	Principle, Technique and interpretation of results in - Haematoxylin and Eosin staining		
15th	57	Role of Laminar airflow in cytology	L15	To demonstrate various automation by use of brochures, charts etc.
	58	Role of cytotechnician in cytology		
	59	Assignmemt		
	60	Test		