Log Book

Preamble

Log books are an essential tool for medical students, serving as a record of their learning, skill development, and clinical experience. For 3rd year MBBS students, log books provide a structured approach to documenting various practical procedures, patient interactions, and the application of theoretical knowledge in real-world settings. This phase of the MBBS curriculum is crucial, as students transition from basic sciences to hands-on clinical skills, learning to manage and observe patients under supervision.

The purpose of the log book is multifaceted. It helps students track their progress, reflect on their clinical experiences, and ensure competency in essential skills. It also serves as an assessment tool, where faculty can review entries to evaluate student engagement, comprehension, and skills development. In each entry, students are encouraged to note the cases they encounter, procedures performed or observed, diagnostic decisions, and their personal reflections on patient care.

Components of Log Book:

A log book for 3rd year MBBS students typically consists of

 several structured sections to help systematically

document clinical experiences and skills development.

 Here are the main parts commonly included:

1. **Personal Details and Goals**:
	* Record your personal information and set pathology objectives (e.g., "Learn to identify common histological findings" or "Understand the lab tests for infectious diseases").
2. **Attendance Record**:
	* Keep track of attendance for lab sessions and any clinical pathology postings, signed by the supervisor.
3. **Hematological Observations**:
	* Document slides or specimens observed, including:
		+ Descriptions of normal and pathological findings.
		+ Diagnostic features of common diseases (e.g., cancer, tuberculosis, autoimmune disorders).
		+ Supervisor’s feedback on slide interpretations.
4. **Laboratory Procedures and Techniques**:
	* Record any lab techniques learned or observed, such as:
		+ Staining techniques, blood smears, urine and stool analysis, and specimen processing.
		+ Notes on specimen handling, preparation, and diagnostic relevance.
5. **Case-Based Documentation**:
	* For each case, document:
		+ Clinical history, lab investigations, and pathology findings.
		+ Diagnostic process, including relevant markers or imaging studies.
	* Reflect on the connection between pathology findings and patient symptoms.

**General Tips for Completing the Log Books:**

* **Consistency**: Regularly update each section during or immediately after patient rounds or procedures.
* **Detail and Clarity**: Document all cases and procedures in clear, concise language, focusing on learning outcomes.
* **Reflection**: Use the reflection sections to internalize key concepts, identify areas for improvement, and reinforce learning.
* **Facilitators Feedback**: Actively seek feedback from facilitators to ensure all competencies are achieved, and use their advice to guide your learning.





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| **Pathology****3rd Year MBBS** |
| **PRACTICALS** |
| **BLOCK -VII** |
| **FOUNDATION MODULE – II** |
| **Sr.No** | **Date** | **Topic** | **Attended/Non Attended** | **Sig** |
| 1 |  | Cellular adaptations to stress |  |  |
| 2 |  | Fatty change, Calcification, Pigmentation |  |  |
| 3 |  | Diagnosis of Acute inflammation |  |  |
| 4 |  | Chronic and granulomatous inflammation. |  |  |
| **FOUNDATION MODULE – III** |
| **Sr.No** | **Date** | **Topic** | **Attended/Non Attended** | **Sig** |
| 1 |  | Chronic Venous Congestion, Thrombosis, Infarction |  |  |
| 2 |  | Diagnosis of benign Neoplasia |  |  |
| 3 |  | Diagnosis of malignant Neoplasia |  |  |

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| **FOUNDATION -II** |
| **Topic of practical** | **Objectives**  | **Skills** | **Miller’s Pyramid Level Reflected** |
| Cellular adaptations to stress | Classify various cellular adaptations to stress  | Demonstrate the ability to recognize and describe different cellular adaptations, such as hypertrophy, atrophy, and metaplasia, under the microscope.Illustrate key differences in morphology between normal and adapted cells. | **Knows** |
| Fatty change, Calcification, Pigmentation | Enlist various conditions which can lead to fatty change calcification and pigmentation | Identify and distinguish fatty change, calcification, and pigmentation in tissue samples.Utilize staining identification to highlight these pathological changes effectively.Accurately document findings and compare them with reference images or case examples. | **Does**  |
| Diagnosis of Acute inflammation | Identify and explain the cardinal signs of acute inflammation and understand their underlying physiological mechanisms. | Identify acute inflammation on histological slides, noting key features such as cellular infiltration and edema.Perform a differential diagnosis based on the histopathological appearance of acute inflammation.Interpret gross and microscopic findings accurately to correlate with clinical information. | **Does**  |
| Chronic and granulomatous inflammation. | Identify and differentiate between chronic and granulomatous inflammation on histopathological slides by recognizing characteristic cell types and specific structures like granulomas**.** | Recognize and differentiate between chronic non granulomatous inflammation and granulomatous inflammation under the microscope.Demonstrate an understanding of the characteristic cell types involved in granulomatous inflammation.Document observations in a structured manner for reporting and analysis | **Knows**  |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| **CHECKLIST FOR CELLULAR ADAPTATION TO STRESS** | **CASES****(Minimum 1 Entry)** |
| **STEP/TASK** |
| Task:**Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat and gloves before handling specimens**Task:** Examine gross & microscopic features of cellular adaptation (Hypertrophy, Hyperplasia, Atrophy, Metaplasia) |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| Procedure: 1. Analyze organ/tissue samples provided to identify hypertrophic changes based on size and appearance.
2. Use a microscope to study tissue slides, noting increased cell numbers and tissue volume
3. Observe and identify reduced cell size and volume in provided histological slides.
4. Examine tissue slides under the microscope to identify replacement of one cell type with another (metaplasia)
5. Provide preliminary interpretation of observed cellular adaptations.
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| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST for Fatty Liver change** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of Gross specimens , microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify gross & microscopic pathological changes in  Liver during fatty change and intracellular accumulation of pigments.**Fatty changes** (steatosis) and their causes (e.g., alcohol, metabolic syndrome)**.Intracellular pigments** (e.g., lipofuscin, hemosiderin, melanin).**Types and mechanisms of calcification** (dystrophic and metastatic).DRAWING AND LABELLING MICROSCOPIC FINDINGS | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Properly use microscope .
2. Focus & review the provided slides.
3. Identification of the key microscopic features of **Fatty Change :**

Vacuoles in hepatocytes (clear spaces).Lipid droplets under specific stains.**Recognize pigmentation types:**Hemosiderin granules (brownish-yellow deposits).Lipofuscin accumulation (yellow-brown "wear-and-tear" pigment).Melanin in specialized cells (dark brown pigment).**Observe calcifications:**Granular deposits in necrotic tissue (dystrophic).Diffuse deposits in hypercalcemic states (metastatic).1. Provide Preliminary diagnosis.
2. Short quiz and provision of scenarios for diagnosis.

6 . Peer discussion on findings and interpretations. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| CHECKLIST FOR Diagnosis of Acute inflammation | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** Diagnosis of Acute inflammation1. dentify and explain the cardinal signs of acute inflammation and understand their underlying physiological mechanisms 1. Drawing and labelling microscopic findings
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1.** Identify acute inflammation on histological slides, noting key features such as cellular infiltration and edema.Perform a differential diagnosis based on the histopathological appearance of acute inflammation.Interpret gross and microscopic findings accurately to correlate with clinical information.**Skill/activity performed satisfactorily**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| CHECKLIST FOR CHRONIC AND GRANULOMATOUS INFLAMMATION  | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** chronic and granulomatous inflammation1. 1. Identify and differentiate between chronic and granulomatous inflammation on histopathological slides by recognizing characteristic cell types and specific structures like granulomDrawing and labelling microscopic findings
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1.** Recognize and differentiate between chronic non granulomatous inflammation and granulomatous inflammation under the microscope.Demonstrate an understanding of the characteristic cell types involved in granulomatous inflammation.Document observations in a structured manner for reporting and analysis.Interpret gross and microscopic findings accurately to correlate with clinical information.**Skill/activity performed satisfactorily**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **Foundatio -III** |
| **Topic of Practical** | **Knowledge**  | **Skills** | **Miller’s pyramid of Reflection** |
| Chronic Venous Congestion, Thrombosis, Infarction | 1. Describe the pathophysiology of chronic venous congestion, thrombosis, and infarction.
2. Identify the morphological changes in tissues due to chronic venous congestion and infarction.
3. Differentiate between arterial and venous thrombosis in terms of etiology and outcomes.
 | 1. Examine gross specimen and identity features of venous congestion, thrombosis, or infarction.
2. Examine histological slides to identify congestion, thrombosis, or infarction under the microscope.
3. Identify key microscopic features distinguishing chronic venous congestion, thrombosis, and infarction.
4. Document findings systematically and accurately during a histopathological examination.
 | **knows how** |
| Diagnosis of benign Neoplasia | 1. Define and describe the general characteristics of benign neoplasms, including growth patterns and cellular morphology.
2. Identify common types of benign neoplasms in various tissues and organs.
3. Explain the clinical relevance and potential complications of benign neoplasms.
4. Differentiate between benign and malignant neoplasms based on histopathological features.
 | 1. identify gross specimen and identity features of Benign neoplasm
2. Examine histological slides for the microscopic examination of benign neoplasms.
3. Recognize and identify distinguishing microscopic features of benign neoplasms under the microscope.
4. Record findings systematically and accurately for diagnosis and further discussion.
 | **knows how** |
| Diagnosis of malignant Neoplasia | 1. Describe the characteristics of malignant neoplasms, including cellular atypia, rapid growth, and potential for metastasis.
2. Explain the pathophysiology of malignant transformation and the factors contributing to carcinogenesis.
3. Differentiate between malignant and benign neoplasms based on histopathological features and clinical outcomes.
 | 1. Examine gross specimen and identity features of Malignant Neoplasm.
2. Identify key microscopic features of malignancy, such as pleomorphism, hyperchromatism, and abnormal mitotic figures.
3. Differentiate malignant cells from benign cells under the microscope and document findings accurately.
4. Demonstrate systematic and precise documentation of histopathological observations for diagnostic and educational purposes.
 | **knows how** |

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| CHECKLIST FOR CHRONIC VENOUS CONGESTION, THROMBOSIS, INFARCTION | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** Chronic Venous Congestion, Thrombosis, Infarction1. Describe the pathophysiology of chronic venous congestion, thrombosis, and infarction.
2. Identify the morphological changes in tissues due to chronic venous congestion and infarction.
3. Differentiate between arterial and venous thrombosis in terms of etiology and outcomes.
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| 1. Examine gross specimen and identity features of venous congestion, thrombosis, or infarction.
2. Examine histological slides to identify congestion, thrombosis, or infarction under the microscope.
3. Identify key microscopic features distinguishing chronic venous congestion, thrombosis, and infarction.

Document findings systematically and accurately during a histopathological examination. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |
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| CHECKLIST FOR DIAGNOSIS OF BENIGN NEOPLASIA | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** Diagnosis of benign Neoplasia1. Describe the characteristics of malignant neoplasms, including cellular atypia, rapid growth, and potential for metastasis.
2. Explain the pathophysiology of malignant transformation and the factors.
3. Drawing and labelling microscopic findings
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| 1. Examine gross specimen and identity features of venous congestion, thrombosis, or infarction.
2. Examine histological slides to identify congestion, thrombosis, or infarction under the microscope.
3. Identify key microscopic features distinguishing chronic venous congestion, thrombosis, and infarction.

Document findings systematically and accurately during a histopathological examination. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| CHECKLIST FOR DIAGNOSIS OF MALIGNANT NEOPLASIA | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** Diagnosis of malignant Neoplasia1. Describe the characteristics of malignant neoplasms, including cellular atypia, rapid growth, and potential for metastasis.
2. Explain the pathophysiology of malignant transformation and the factors
3. Drawing and labelling microscopic findings
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| Procedure :1. Examine gross specimen and identity features of Malignant Neoplasm.
2. Identify key microscopic features of malignancy, such as pleomorphism, hyperchromatism, and abnormal mitotic figures.

Differentiate malignant cells from benign cells under the. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **PRACTICALS** |
| **BLOCK -VIII** |
| **GIT Module**  |
| **Sr.No** | **Date** | **Topic** | **Attended/Non Attended** | **Sig** |
| 1 |  | Salivary tumor, CA oesophags, peptic ulcer, CA stomach  |  |  |
| 2 |  | Acute appendicitis, Intestinal TB, Crohn’s disease, UC, CAcolon  |  |  |
| 3 |  | Stool examination/ Parasitology  |  |  |
| 4 |  | Fatty change, Cirrohsis, CA liver |  |  |
|  |  |  |  |  |
|  **Microbes and Anti microbials** |
| **Sr.No** | **Date** | Culture media  | **Attended/Non Attended** | **Sig** |
| 1 |  | Gram staining and Zn staining  |  |  |
| 2 |  | Biochemical Test, Catalase, Coagulase, Urease, oxidase, indole test, citrate  |  |  |
| 3 |  | Lab Diagnosis of fungal infection |  |  |
|  |  | Microscope, Bacterial morphology  |  |  |
|  |  | Culture media  |  |  |
|  |  | Gram staining and Zn staining  |  |  |

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| **CHECKLIST FOR** SALIVARY TUMOR, CA ESOPHAGUS, PEPTIC ULCER, CA STOMACH | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of Gross specimens , microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify gross & microscopic pathological changes in  Salivary tumor, CA esophagus, peptic ulcer, CA stomach and their causes ,identification of pathological features in the respective slidesDRAWING AND LABELLING MICROSCOPIC FINDINGS | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Properly use microscope .
2. Focus & review the provided slides.
3. Identification of the key microscopic features of

**CA Oesophagus: Identify types** **squamous cell carcinoma keratin pearls and intercellular bridging, pleomorphic cells with hyperchromatic nuclei and invasion of submucosa**  **Adenocarcinoma identify dysplastic columnar epithelium replacing normal squamous epithelium and glandular architecture**CA stomach :Irregular invasive glandsor sheets of malignant cells in ca stomach. Peptic ulcers:Disruption of mucosal layer, presence of inflammatory infltrates (neutrophils and macrophages) evidence of granulation tissue. (metastatic).1. Provide Preliminary diagnosis.
2. Short quiz and provision of scenarios for diagnosis.

6 . Peer discussion on findings and interpretations. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST FOR** STOOL EXAMINATION | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory before the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of stool parasites****1. Identify and describe the characteristic morphological features of common intestinal parasites found in stool specimens, including protozoa and helminths: Students should be able to recognize and describe the typical features of parasites such as:** **- Giardia lamblia** **- Entamoeba histolytica** **- Ascaris lumbricoides** **- Hookworm ova** **- Taenia saginata****2. Demonstrate proficiency in performing stool parasite examination techniques, including direct wet mount, concentration methods, and staining procedures: Students should be able to:** **- Prepare and examine direct wet mounts** **- Perform concentration methods (e.g., formalin-ether concentration)** **- Apply staining procedures (e.g., iodine, trichrome)** **- Identify and report parasites found in stool specimens**DRAWING AND LABELLING MICROSCOPIC FINDINGS | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1. Properly use microscope** **2. Focus & review the provided slides/ photographs.****3. Identification of the key microscopic features****4. Provide Preliminary diagnosis.** **SKILL/ACTIVITY PERFORMED SATISFACTORILY**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |
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| CHECKLIST FOR ACUTE APPENDICITIS INTESTINAL TB CROHN’s DISEASE CA COLON | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory** before **the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of** Acute appendicitis Intestinal TB Crohn’ disease CA colon **1** Identify the slides and recognize two important points of identification of acute appendicitis Intestinal TB, **CA Colon: Glandular invasion, desmoplastic stroma, and nuclear pleomorphism.****Acute Appendicitis: Transmural inflammation, crypt abscesses.****Intestinal TB: Granulomas, caseation necrosis, AFB on Ziehl-Neelsen staining****2.** DRAWING AND LABELLING MICROSCOPIC FINDINGS | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1. Properly use microscope** **2. Focus & review the provided slides/ photographs.****3. Identification of the key microscopic features****4. Provide Preliminary diagnosis.** **SKILL/ACTIVITY PERFORMED SATISFACTORILY**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| CHECKLIST FOR Fatty change, Cirrhosis, CA liver | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: reviewed relevant theory** before **the session** **Ppe: wearing lab coat before entering lab.****Task: practical study of** acute appendicitis intestinal tb crohn’ disease ca colon 1. Enlist important histomorphology features for diagnosis of fatty change, cirrhosis, ca liver
2. Drawing and labelling microscopic findings
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1.** Identify the slides and recognize two points of identification of Fatty change, Cirrhosis, CA liver**2. Provide Preliminary diagnosis.** **Skill/activity performed satisfactorily**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| CHECKLIST FOR LABORATORY DIAGNOSIS OF HEPATOBILIARY DISEASES | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory** before **the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of** laboratory diagnosis of hepatobiliary diseases**1** Describe the clinical significance of LFT s **Liver Function Tests (LFTs):****Hepatocellular injury: Elevated ALT, AST.****Cholestasis: Elevated ALP, GGT, bilirubin (direct and indirect).****Synthetic dysfunction: Low serum albumin, prolonged prothrombin time (PT).****2. Specific Markers****Viral markers: HBsAg, anti-HCV, anti-HAV IgM, etc.****Autoimmune markers: Anti-smooth muscle antibody (ASMA), anti-mitochondrial antibody (AMA).****Tumor markers: Alpha-fetoprotein (AFP) for hepatocellular carcinoma.****3. Tests for Biliary Obstruction****Elevated conjugated bilirubin.****Increased GGT and ALP levels2.****5.Report writing and interpretation in practical copies****SKILL/ACTIVITY PERFORMED ATISFACTORILY**  | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1.** Interpret lab report of a patient with chronic viral, hepatitis, acute viral hepatitis.Interpret lab report of a patient with jaundice.**4. Provide Preliminary diagnosis.**  |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **Microbes**  |
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| Topic of Practical | Objectives  | Skills | Miller’s Pyramid os Reflection |
| Microscope, Bacterial morphology  | Identify and label different parts of a microscope, including the ocular lens, objective lenses, and light source, within 10 minutes.Explain the function of each microscope part, understanding how it contributes to proper slide visualizationDescribe the major bacterial morphologies (e.g., cocci, bacilli, spirilla) and explain the clinical relevance of each type.Discuss differences between Gram-positive and Gram-negative cell walls and how these differences impact pathogenicity and treatment options. | Demonstrate proper handling and adjustment of the microscope to view histology slides, achieving clear magnification within 5 minutes.Practice cleaning, storing, and maintaining the microscope, following a checklist in 10 minutes.Engage with peers in discussion, demonstrating openness to others’ insights on bacterial morphology and pathogenesis.Observe bacterial morphology on stained slides, accurately identifying shape, size, and arrangement within 5 minutes per specimen.Draw and label bacterial cell wall structures, including peptidoglycan and lipopolysaccharides, completing this diagram in 10 minutes. | **Knows how** |
| Culture media  | List and differentiate types of culture media (e.g., nutrient, selective, differential, enriched), explaining their uses in pathogen identification.Discuss clinical applications of each media type, such as MacConkey agar for gram-negative bacteria and blood agar for fastidious organisms. | Demonstrate aseptic technique in inoculating culture plates in a 10-minute practical, ensuring sterility to prevent contamination.Observe and identify bacterial colony characteristics on different media, focusing on features like hemolysis on blood agar. | **Does how** |
| Gram staining and Zn staining  | Recall and describe the steps of Gram and Ziehl-Neelsen (ZN) staining procedures, understanding each step’s role in diagnostic staining.Relate staining characteristics to specific pathogens, identifying the clinical importance of these techniques in cases like tuberculosis. | Perform the Gram staining procedure within 15 minutes, including crystal violet, iodine, alcohol wash, and safranin application.Interpret Gram- and ZN-stained slides, accurately identifying bacterial properties such as Gram-positive and Gram-negative bacteria within 5 minutes per slide.Create a flowchart for both staining methods, diagramming each step in order with approximate times. | **Does how** |
| Biochemical Test, Catalase, Coagulase, Urease, oxidase, indole test, citrate  | Outline the applications of biochemical tests (e.g., catalase, coagulase, oxidase) and discuss their clinical relevance in differentiating bacterial pathogens.Explain the purpose of molecular diagnostic techniques (e.g., PCR, ELISA, ICT), describing their principles and applications in pathogen detection. | Perform an ELISA simulation in the lab, following procedural steps and interpreting color changes within 20 minutes.Draw a labeled PCR setup and identify each phase (denaturation, annealing, extension) within 10 minutes, noting each step's diagnostic importance. | **OSPE** |
| Lab Diagnosis of fungal infection | Describe and differentiate between common fungal structures (yeasts, molds, hyphae), discussing pathogenic fungi like Candida and Aspergillus.Explain the clinical uses and limitations of fungal diagnostic methods, including histopathology, culture, and serology, within a 10-minute case-based scenario. | Prepare a KOH mount slide and identify fungal structures, demonstrating proficiency in slide preparation within 10 minutes.Draw and label structural components of pathogenic fungi, connecting morphology to disease manifestations in 10 minutes | **Does how** |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| CHECKLIST FOR MICROSCOPE, BACTERIAL MORPHOLOGY | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory** before **the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of** Microscope, Bacterial morphology 1. Identify and label different parts of a microscope, including the ocular lens, objective lenses, and light source
2. Describe the major bacterial morphologies (e.g., cocci, bacilli, spirilla)
3. Discuss differences between Gram-positive and Gram-negative cell walls and how these differences
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Demonstrate proper handling and adjustment of the microscope to view histology slides, achieving clear magnification
2. Observe bacterial morphology on stained slides, accurately identifying shape, size, and arrangement within 5 minutes per specimen.
3. **Provide Preliminary diagnosis.**

 **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| CHECKLIST FOR CULTURE MEDIA | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory** before **the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of culture media**1. List and differentiate types of culture media (e.g., nutrient, selective, differential, enriched), explaining their uses in pathogen identification
2. Discuss clinical applications of each media
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| Procedure:Demonstrate aseptic technique in inoculating culture plates practical, ensuring sterility to prevent contamination.Observe and identify bacterial colony characteristics on different media, focusing on features like hemolysis on blood agar. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| CHECKLIST FOR BIOCHEMICAL TEST, CATALASE, COAGULASE, UREASE, OXIDASE, INDOLE TEST, CITRATE | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation: Reviewed relevant theory** before **the session** **PPE: Wearing lab coat before entering lab.****Task: practical study of** Biochemical Test, Catalase, Coagulase, Urease, oxidase, indole test, citrate1. Outline the applications of biochemical tests
2. Discuss their clinical relevance
3. Discuss clinical applications of each media
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| Procedure:1. Perform an ELISA simulation in the lab, following procedural steps and interpreting color changes within 20 minutes.
2. Draw a labeled PCR setup and identify each phase
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST** LAB DIAGNOSIS OF FUNGAL INFECTION | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of Gross specimens , microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify Lab Diagnosis of fungal infectionDescribe and differentiate between common fungal structures (yeasts, molds, hyphaeExplain the clinical uses and limitations of fungal diagnostic methods | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Properly use microscope .
2. Focus & review the provided slides.
3. Identification of the key microscopic features of **fungus:**
4. Draw and label structural components of pathogenic fungi, connecting morphology to disease
5. Provide Preliminary diagnosis.
6. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **BLOCK -IX** |
| **CVS AND RESPIRATION MODULE – II** |
| **Sr.No** | **Date** | **Topic** | **Attended/Non Attended** | **Sig** |
| 1 |  | Morphology of vascular lesions |  |  |
| 2 |  | Lipid profile and cardiac enzymes |  |  |
| 3 |  | MI and Rheumatic heart disease |  |  |
| 4 |  | Morphology of lungLesions |  |  |
| **HEMATOLOGY AND IMMUNOLOGY – II** |
| **Sr.No** | **Date** | **Topic** | **Attended/Non Attended** | **Sig** |
| 1 |  | **RBC Morphology** |  |  |
| 2 |  | **Benign WBC Morphology** |  |  |
| 3 |  | **Acute and Chronic Leukemia** |  |  |
|  |  | **Basic Hematology techniques,Blood Grouping,Periphral Smear,ESR interpretation,Blood collection in Vacutainers Tube** |  |  |

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| **CVS AND RESPIRATION MODULE – II** |
| **Topic of Practical** | **Knowledge**  | **Skills** | **Miller’s pyramid of Reflection** |
| Morphology of vascular lesions | 1. Describe the pathophysiology of vascular lesions.
2. Identify the morphological changes in vascular lesions.
 | 1. Examine histological slides to identify vascular lesions under the microscope.
2. Identify key microscopic features of vascular lesionsthrombosis, and infarction.
3. Document findings systematically and accurately during a histopathological examination.
 | **knows how** |
| Lipid profile and cardiac enzymes | 1. Define general Lipid profile and cardiac enzymes and significance of their values
2. Identify common types of cardiac enzymes.
3. Explain the clinical relevance
 | 1. Recognize and identify values of cardiac enzymes
 | **knows how** |
| MI and Rheumatic heart disease | 1. Describe the characteristics of MI and Rheumatic heart disease.
2. Explain the pathophysiology of MI and Rheumatic heart disease..
 | 1. Examine gross specimen and identity features of MI and Rheumatic heart disease
2. .Identify key microscopic features of MI and Rheumatic heart disease.
 | **knows how** |
| **HEMATOLOGY AND IMMUNELOGY MODULE**  |
| **Topic of Practical** | **Knowledge**  | **Skills** | **Miller’s pyramid of Reflection** |
| Morphology of vascular lesions | 1. Describe the pathophysiology of vascular lesions.
2. Identify the morphological changes in vascular lesions.
 | 1. Examine histological slides to identify vascular lesions under the microscope.
2. Identify key microscopic features of vascular lesionsthrombosis, and infarction.
3. Document findings systematically and accurately during a histopathological examination.
 | **knows how** |
| Lipid profile and cardiac enzymes | 1. Define general Lipid profile and cardiac enzymes and significance of their values
2. Identify common types of cardiac enzymes.
3. Explain the clinical relevance
 | 1. Recognize and identify values of cardiac enzymes
 | **knows how** |
| MI and Rheumatic heart disease | 1. Describe the characteristics of MI and Rheumatic heart disease.
2. Explain the pathophysiology of MI and Rheumatic heart disease..
 | 1. Examine gross specimen and identity features of MI and Rheumatic heart disease
2. .Identify key microscopic features of MI and Rheumatic heart disease.
 | **knows how** |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| **CHECKLIST OF MORPHOLOGY OF VASCULAR LESIONS** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of Gross specimens , microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify MORPHOLOGY OF VASCULAR Lesions* Identify the morphological features of Calcification
* Identify the morphological features of atherosclerosis
* Identify the morphological features of thrombus

Demonstrate collaborative working skills | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Properly use microscope .
2. Focus & review the provided slides.
3. Identification of the key microscopic features of **:**
	1. Calcification, atherosclerosis, and thrombus
4. Provide Preliminary diagnosis.
5. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| **CHECKLIST OF LIPID PROFILE AND CARDIAC ENZYMES** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of Gross specimens , microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify Lipid profile and cardiac enzymes1. Enlist cardiac enzymes
2. Enlist parameters for lipid profile
3. Demonstrate collaborative working skills
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Enlist cardiac enzymes
2. Enlist parameters for lipid profile
3. Provide Preliminary diagnosis.
4. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST OF MI AND RHEUMATIC HEART DISEASE** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify MI and Rheumatic heart disease1. Illustrate with help of diagram the different types of Vegetation in heart valves
2. Interpret the morphological Changes in MI
3. Demonstrate collaborative working skills
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Interpret the morphological Changes in MI
2. Provide Preliminary diagnosis.
3. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST OF MORPHOLOGY OF LUNG****LESIONS** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify Morphology of lung lesions1. **Identify microscopic features of Emphysema**
2. Illustrate with the help of a diagram the morphology of emphysema
3. Illustrate with the help of a diagram the morphology of granuloma
4. Demonstrate collaborative working skills
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. **Identify microscopic features of Emphysema**
2. Illustrate with the help of a diagram the morphology of emphysema
3. Illustrate with the help of a diagram the morphology of granuloma
4. Provide Preliminary diagnosis.
5. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CVS AND RESPIRATION MODULE – II** |
| **Topic of Practical** | **Knowledge**  | **Skills** | **Miller’s pyramid of Reflection** |
| RBC Morphology | 1. Describe the pathophysiology of vascular lesions.
2. Identify the morphological changes in vascular lesions.
 | 1. Examine histological slides to identify vascular lesions under the microscope.
2. Identify key microscopic features of vascular lesionsthrombosis, and infarction.
3. Document findings systematically and accurately during a histopathological examination.
 | **knows how** |
| Benign WBC Morphology | 1. Define general Lipid profile and cardiac enzymes and significance of their values
2. Identify common types of cardiac enzymes.
3. Explain the clinical relevance
 | 1. Recognize and identify values of cardiac enzymes
 | **knows how** |
| Acute and Chronic Leukemia | 1. Describe the characteristics of MI and Rheumatic heart disease.
2. Explain the pathophysiology of MI and Rheumatic heart disease..
 | 1. Examine gross specimen and identity features of MI and Rheumatic heart disease
2. .Identify key microscopic features of MI and Rheumatic heart disease.
 | **knows how** |
|  |
| Topic  | **Knowledge**  | **Skills** | **Miller’s pyramid of Reflection** |
| RBC Morphology  | 1. Describe the Morphology
	1. Of normal RBC and their disorders
 | * 1. Examine histological slides to identify normal RBC and their disorders (Anemias)
	2. under the microscope.
1. Document findings systematically and accurately
 |  |
| Benign WBC Morphology | 1. Describe the Morphology
	1. Of normal WBC and their disorders
 | * 1. Examine histological slides to identify normal WBC and their disorders
	2. under the microscope.
1. Document findings systematically and accurately
 | **knows how** |
| Acute and Chronic Leukemia | 1. Define Acute and Chronic Leukemia
2. Identify common types of Acute and Chronic Leukemia
3. Explain the clinical relevance
 | 1. Recognize and identify microscopic features of Acute and Chronic Leukemia
 | **knows how** |
| Basic Hematology techniques,Blood Grouping,Periphral Smear,ESR interpretation,Blood collection in Vacutainers Tube | 1. Describe the characteristics of Periphral Smear.
2. Explain the Hematology techniques,Blood
 | 1. ESR interpretation,
2. Blood collection in Vacutainers Tube.
 | **knows how** |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| **CHECKLIST OF EVALUATION OF MORPHOLOGY OF RBCs ON MICROSCOPY** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify Morphology of RBCs1. Identify morphology of RBCs
2. Illustrate with the help of a diagram the morphology of normal and abnormal

RBCsDemonstrate collaborative working skills | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. Sample collection
2. Identify microscopic features of normal RBCs
3. Identify abnormal features of RBCs based on size, shape, RBC inclusions, Hb content.
4. Interpretation of RBC morpho;ogocal features.
5. Illustrate with the help of a diagram the morphology of normal RBCs and abnormal morphology of RBC
6. Clear, structured reporting using appropriate terminology
7. Provide Preliminary diagnosis.
8. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST OF EVALUATION OF BENIGN WBC DISORDERS ON MICROSCOPY** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat , gloves ,face masks and close -toed shoes. Ensure proper handling of microscope and glass slides ,Follow aseptic and safety protocols.**Task:** Examine and identify Morphology of benign WBC disorders1. **Identify** benign **WBC disorders**
2. Illustrate with the help of a diagram the morphology of
3. 3. benign WBC disorders

Demonstrate collaborative working skills | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:**1. **Identify microscopic features of WBC**
2. Illustrate with the help of a diagram the morphology of benign WBC disorders
3. Clear, structured reporting using appropriate terminology
4. Provide Preliminary diagnosis.
5. Short quiz and provision of scenarios for diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST** FOR OF **ACUTE AND CHRONIC LEUKEMIAS** DIAGNOSIS ON MICROSCOPY | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **PPE:** Wearing lab coat before entering lab.**Task:** Classify acute and chronic leukemia and make their lab diagnosis* Know the classification of acute and chronic leukemia
* Understand the various laboratory tests required for diagnosis of acute and chronic leukemias
* Understand the microscopic features of these leukemias
 | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| Procedure:1. Properly use microscope
2. Focus & review the provided slides.
3. Identification of the key microscopic features
4. Provide Preliminary diagnosis.
 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| Place a **“✓”** in case box if step/task is performed satisfactorily, an **“X”** if it is not performed satisfactorily, or **N/O** if not observed. Satisfactory: Performs the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or Guidelines |

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| **CHECKLIST FOR ESR DETERMINATION ON MICROSCOPY** | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **TASK :ESR ( ERYTHROCYTE SEDEMENTATION RATE )Performance** Pre-Procedure Preparation**1 . Personal Protective Equipment (PPE)** . Wear a clean lab coat.  . Use disposable gloves. . Wear safety goggles (if necessary).  **2 . Workstation Setup** Ensure the following materials are available and functional:. Well-labeled ESR tubes (e.g., Westergren or Wintrobe tube).. ESR stand or rack.. Anticoagulated blood sample (EDTA or citrate).. Micropipette or disposable dropper.. Timer or stopwatch.b . Clean and disinfect the workstation.**3 . Patient/Specimen Verification**. Verify the identity of the patient or labeled specimen.**4 . Hand Hygiene** Wash hands with soap and water or use alcohol-based handsanitizer. | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1 Preparing the ESR Tube**. Mix the blood sample gently to ensure even distribution of cells without causing hemolysis. . Fill the ESR tube up to the 0-mark (zero level) using a micropipette or dropper .. Avoid air bubbles in the tube.**2 . Placing the Tube in the Stand**. Insert the tube vertically into the ESR stand.Ensure the tube is stable and upright to avoid tilting or uneven results.**3 . Starting the Timer**. Set the timer for the specified duration (commonly 1 hour for Westergren method).. Avoid disturbing the setup during this period.**4 . Reading the Results**. After 1 hour, note the level of the plasma column (clear fluid) in millimeters.. Record the result in mm/hour.**5 . Documentation**. Record the observed value on the lab sheet.. Mention any abnormalities, such as clots or uneven plasma column. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST** FOR **BLOOD GROUPING**  | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **TASK :** BLOOD GROUPING PERFORMANCE : Pre-Procedure Preparation**1 . Personal Protective Equipment (PPE)** . Wear a clean lab coat.  . Use disposable gloves. . Wear safety goggles (if necessary).  **2 . Workstation Setup** . Clean and disinfect the workstation.. Ensure all materials are available and in working order.. Glass slides.. Anti-A, Anti-B, and Anti-D sera.. Sterile lancets or needles.. Disposable dropper or micropipette.. Cotton swabs and 70% alcohol.. Markers for labeling slides.**3 . Patient Identification**. Verify the identity of the patient/simulation model.. Confirm consent (if working with actual patients).  **4 . Hand Hygiene**. Perform hand hygiene with soap and water or alcohol-based hand rub before beginning . | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
| **Procedure:****1 .1 . Preparation of Sample****.**  Clean the fingertip or sample site with 70% alcohol.. Allow the alcohol to air dry.. Use a sterile lancet to prick the fingertip.. Wipe away the first drop of blood with sterile gauze.**2 . Application of Reagents****.**  Label the glass slide with sections for Anti-A, Anti-B, and Anti-D sera.. Place a drop of each reagent in its respective section on the slide.**3 . Adding Blood Sample****.**  Use a dropper or applicator stick to add a small drop of blood to each section.. Mix each drop of blood with the corresponding reagent using a clean applicator stick for each.**4 . Observation****.** Gently rock the slide to mix the blood and reagent.. Observe for agglutination (clumping) in each section:Agglutination in Anti-A: Blood group A.Agglutination in Anti-B: Blood group B.Agglutination in both: Blood group AB.No agglutination: Blood group O.Agglutination in Anti-D: Rh-positive.No agglutination in Anti-D: Rh-negative.**5 . Documentation. R**ecord the results in the lab sheets. |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |

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| **CHECKLIST** FOR Beta-Thalassemia Diagnosis | **CASES****(Minimum 1 Entry)** |
| **TASK** |
| **Preparation:** Reviewed relevant theory before the session  **TASK :** Beta-Thalassemia Diagnosis Pre-Procedure Preparation**1 . Personal Protective Equipment (PPE)** . Wear a clean lab coat.  . Use disposable gloves. . Wear safety goggles (if necessary).  **2 . Work station Setup** . Clean and disinfect the workstation.. Ensure all materials are available and in working order.. Glass slides.. blood sample. Sterile lancets or needles.. Disposable dropper or micropipette.Microscope. Markers for labeling slides.**3 . Patient Identification**. Verify the identity of the patient/simulation model.. Confirm consent (if working with actual patients).  **4 . Hand Hygiene**. Perform hand hygiene with soap and water or alcohol-based hand rub before beginning . | ☐ Yes ☐ No ☐ Yes ☐ No |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |
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| **Procedure:****Peripheral Blood Smear Preparation**: Successfully prepared a peripheral blood smear for examination. |
| **Blood Smear Examination**: Recognized characteristic changes (microcytosis, hypochromia, target cells). |
| **Hemoglobin Electrophoresis Interpretation**: Correctly identified elevated HbA2 and HbF in beta-thalassemia. |
| **Complete Blood Count (CBC) Interpretation**: Analyzed results for microcytic hypochromic anemia with increased reticulocyte count. |
| **Iron Studies**: Interpreted iron studies (ferritin, serum iron, TIBC, transferrin saturation) to rule out iron deficiency anemia. |
| **Differentiation from Other Anemias**: Accurately differentiated beta-thalassemia from other anemias (e.g., iron deficiency anemia, megaloblastic anemia). |
| **Molecular Testing for Beta-Thalassemia**: Identified the role of PCR in diagnosing beta-thalassemia mutations. |

 |  |
| **SKILL/ACTIVITY PERFORMED SATISFACTORILY** |  |
| **Signature of Supervisor** |  |