**Lesson Plan**

Name of the Faculty : Dr. Yogesh Kumar

Discipline : Medical Lab Technology

Semester : 3rd

Subject : Clinical Microbiology-III

Lesson Plan : 15 weeks (from 15 September2022 to 16th January 2023)

Work load (lecture/practical) per week (in hours) : Lectures-03, practicals-03

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Week** |  | **Theory** | | **Practical** | |
| **Lecture**  **day** |  | **Topic(including assignment test)** | **Practical Day**  **(2 hours lab each day), (2 hours each day\*2days in week =4 weekly load)** | **Topic** |
| 1st | 1st | 19/09/2022 | Introduction to the whole syllabus of CMB-III | 1st & 2nd  19/09/2022 | 1. Collection and routine stool examination for detection of intestinal parasites. |
| 2nd | 20/09/2022 | **Ch - 1** Introduction to medical parasitology |
| 3rd | 21/09/2022 | General characteristics, morphology, classification of Protozoa, Helminthes |
| 2nd | 4th | 27/09/2022 | Lab samples collection for detection of parasites (Stool) Parasite transportation | 3rd &4th  03/10/2022 | 1. Experiment on saline preparation |
| 5th | 28/09/2022 | Concentration Techniques of stool, Concentration techniques for demonstration of ova and cysts |
| 6th | 03/09/2022 | Parasite processing and preservationfor routine investigation – (blood) |
| 3rd | 7th | 10/10/2022 | Giardia morphology, life cycle, lab diagnosis | 5th & 6th  10/10/2022 | 1. Experiment on Lugol’s Iodine preparation |
| 8th | 11/10/2022 | Entamoeba histolytica morphology, life cycle, lab diagnosis |
| 9th | 12/10/2022 | Ancylostoma morphology, life cycle, lab diagnosis |
| **(1st Sessional)** | | | | | |
| 4th | 10th | 17/10/2022 | Ascaris lumbricoides morphology, life cycle, lab diagnosis | 7th & 8th  17/10/2022 | 1. Experiment on concentration methods-floatation method (saturated salt solution /zinc sulphate) |
| 11th | 18/10/2022 | T solium, morphology, life cycle, lab diagnosis |
| 12th | 19/10/2022 | T saginata morphology, life cycle, lab diagnosis |
| 5th | 13th | 31/10/2022 | Malarial parasite General Characterstics, life cycle (P. Vivax) | 9th & 10th  31/10/2022 | 1. Experiment on sedimentation method (formal ether) |
| 14th | 02/11/2022 | Malarial parasite morphology, lab diagnosis (P. Vivax) |
| 15th | 07/11/2022 | Malarial parasite morphology, life cycle, lab diagnosis (P. Falciparum) |
| 6th | 16th | 09/11/2022 | Virology – introduction, General Characterstics | 11th & 12th  09/11/2022 | 1. Identification of adult worms/cyst from preserved specimen Tape, Hook, Roundworm, |
| 17th | 14/11/2022 | Virus origin, reaction to Physical and chemical & Replication: classification |
| 18th | 15/11/2022 | Virus classification and cultivation |
| **2nd Sessional** | | | | | |
| 7th | 19th | 16/11/2022 | Medically important viruses HBV | 13th & 14th  16/11/2022 | 1. Identification of E coli, Giardia, Entamoeba |
| 20th | 21/11/2022 | Polio pathogenicity, lab diagnosis, prevention |
| 21st | 22/11/2022 | Rabies pathogenicity, lab diagnosis, prevention |
| 8th | 22nd | 23/11/2022 | HIV pathogenicity, lab diagnosis, prevention | 15th & 16th  23/11/2022 | 1. To Prepare stainning solution and blood smear (thick and thin smear) and perform staining of smear (Leishman, Giemsa) |
| 23rd | 28/11/2022 | Transportation of virology sample & Storage of virology sample |
| 24th | 29/11/2022 | Virological sample |
| 9th | 25th | 30/11/2022 | Revision of unit No. 1 & 2 | 17th &18th  30/11/2022 | 1. Examination and demostratation of malarial parasite and their various stages |
| 26th | 05/12/2022 | Revision of unit No. 3 & 4 |
| 27th | 06/12/2022 | Revision of unit No. 5 & 6 |
| 10th | 28th | 07/12/2022 | Revision of unit No. 7 & 8 | 19th &20th  07/12/2022 | 1. Revision of Experiment No. 1, 2, 3. |
| 29th | 22/12/2022 | Assignment 1st |
| 30th | 33/12/2022 | Revision of unit No. 9 & Rabies (10) |
| 11th | 31st | 14/12/2022 | Revision of unit No. Polio & HBV (10) | 21st &22nd  14/12/2022 | 1. Revision of Experiment No. 4, 5, 6. |
| 32nd | 19/12/2022 | Assignment 2nd |
| 33rd | 20/12/2022 | Revision of unit No. HIV (10) & Unit No.11 |
| 12th | 34th | 21/12/2022 | Assignment 3rd | 23rd & 24th  21/12/2022 | 1. Revision of Experiment No. 7, 8, 9. |
| 35th | 26/12/2022 | Revision of unit No. 1, 2 & 3 |
| 36th | 27/12/2022 | Revision of unit No. 4, 5 & 6 |
| **3rd Sessional** | | | | | |
| 13th | 37th | 28/12/2022 | Revision of unit No. 7, 8,9,10 | 25th & 26th  28/12/2022 | * Problem solving sessions of students in practical |
| 38th | 02/01/2023 | Revision of Unit No. 11 |
| 39th | 03/01/2023 | FAQ’s in syllabus CMB |
| 14th | 40th | 04/01/2023 | Revision of Unit No. 1-8 | 27th & 28th  04/01/2023 | * VIVA |
| 41st | 09/01/2023 | Revision of Unit No. 9-11 |
| 42nd | 10/01/2023 | FAQ’s in syllabus CMB |
| 15th | 43rd | 11/01/2023 | Revision of Whole syllabus | 29th & 30th  11/01/2023 | * Revision of all experiments |
| 44th |  | Revision of Whole syllabus |
| 45th |  | FAQ’s in syllabus CMB |

**Lesson Plan**

Name of the Faculty : Dr. Yogesh Kumar

Discipline : Medical Lab Technology

Semester : 3rd

Subject : Haematology-III

Lesson Plan : 15 weeks (from 15 September2022 to 16th January 2023)

Work load (lecture/practical) per week (in hours) : Lectures-03, practicals-03

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Week** |  | | **Theory** | **Practical** | |
| **Lecture**  **day** | **Tentative date of lect.** | **Topic(including assignment test)** | **Practical Day**  **(2 hours lab each day), (2 hours each day\*2days in week = 4 weekly load)** | **Topic** |
| 1st | 1st | 19/09/2022 | Introduction to the whole syllabus of Haematology-III | 1st & 2nd  19/09/2022 | 1. ESR estimation in blood sample |
| 2nd | 20/09/2022 | ESR and PCV |
| 3rd | 21/09/2022 | Introduction |
| 2nd | 4th | 27/09/2022 | Various methods of estimation of ESR & PCV | 3rd &4th  03/10/2022 | 1. To determine PCV by various methods |
| 5th | 28/09/2022 | Merits and Demerits |
| 6th | 03/09/2022 | Red cell Indicies, Hb, PCV & RBC |
| 3rd | 7th | 10/10/2022 | Supravital stain & Reticulocyte counting - Introduction | 5th & 6th  10/10/2022 | 1. To determine Red Cell Indices |
| 8th | 11/10/2022 | Principle, Procedure and calculation |
| 9th | 12/10/2022 | MCV, MCH, MCHC definition, range calculation & interpretation |
| **1st Sessional Hematology** | | | | | |
| 4th | 10th | 17/10/2022 | NESTROFT | 7th & 8th  17/10/2022 | 1. Counting of Reticulocyte in blood |
| 11th | 18/10/2022 | Red cell fragility test |
| 12th | 19/10/2022 | Significance of red cell fragility |
| 5th | 13th | 31/10/2022 | Variation in physiological values of Hb | 9th & 10th  31/10/2022 | 1. Perform red cell fragility test on blood |
| 14th | 02/11/2022 | Variation in physiological values of PCV |
| 15th | 07/11/2022 | Variation in physiological values of T.L.C |
| 6th | 16th | 09/11/2022 | Variation in physiological values of Platlets count | 11th & 12th  09/11/2022 | 1. Perform sickling test on blood |
| 17th | 14/11/2022 | Introduction to Anemia, definition & morphological classification |
| 18th | 15/11/2022 | Anemias-Etiological classification |
| **2nd Sessional Hematology** | | | | | |
| 7th | 19th | 23/11/2022 | Laboratory diagnosis of: Iron deficiency anaemia | 13th & 14th  16/11/2022 | 1. Estimation of fetal Hb by alkali denaturation test |
| 20th | 28/11/2022 | Lab diagnosis –Haemolytic anaemia |
| 21st | 29/11/2022 | Lab diagnosis –Aplastic anaemia |
| 8th | 22nd | 30/11/2022 | Lab diagnosis – Megalobastic anaemia | 15th & 16th  23/11/2022 | 1. Estimation of plasma Hb |
| 23rd | 05/12/2022 | Laboratory diagnosis of: including sickle cell anaemia |
| 24th | 06/12/2022 | Laboratory diagnosis of: thallasseamia |
| 9th | 25th | 07/12/2022 | Revision of Unit No. 1 | 17th &18th  30/11/2022 | 1. Estimation of G6PD by Methylene Blue Reduction test |
| 26th | 22/12/2022 | Revision of Unit No. 2 |
| 27th | 33/12/2022 | Revision of Unit No. 3.1, 3.2, 3.3 |
| 10th | 28th | 14/12/2022 | Revision of Unit No. 3.4 | 19th &20th  07/12/2022 | 1. Revision of Experiment No. 1, 2, 3. |
| 29th | 19/12/2022 | Assignment 1st |
| 30th | 20/12/2022 | Revision of Unit No. 4.1, 4.2 a |
| 11th | 31st | 21/12/2022 | Revision of Unit No. 4.3, 4.4 a & b | 21st &22nd  14/12/2022 | 1. Revision of Experiment No. 4, 5, 6. |
| 32nd | 26/12/2022 | Assignment 2nd |
| 33rd | 27/12/2022 | Revision of Unit No. 4.4 c |
| 12th | 34th | 23/11/2022 | Revision of Unit No. 4.2 d | 23rd & 24th  21/12/2022 | 1. Revision of Experiment No. 7, 8, 9. |
| 35th | 28/11/2022 | Revision of Unit No. 5 |
| 36th | 29/11/2022 | Revision of unit No. 1 & 2 |
| **3rd Sessional Exam** | | | | | |
| 13th | 37th | 28/12/2022 | Revision of Unit No. 3 & 4 | 25th & 26th  28/12/2022 | * Problem solving seesions of students in practicals |
| 38th | 02/01/2023 | Assignment 3rd |
| 39th | 03/01/2023 | Revision of Unit No. 3 & 4 |
| 14th | 40th | 04/01/2023 | Revision of Unit No. 5 | 27th & 28th  04/01/2023 | * VIVA |
| 41st | 09/01/2023 | FAQ’s in syllabus HTL |
| 42nd | 10/01/2023 | Revision of Whole syllabus |
| 15th | 43rd | 11/01/2023 | FAQ’s in syllabus HTL | 29th & 30th  11/01/2023 | * Revision of all experiments |
| 44th |  | Revision of Whole syllabus |
| 45th |  | Revision of Whole syllabus |

**LESSON PLAN**

**NAME OF FACULTY** :

**DISCIPLINE** : DMLT

**SEMESTER** : 3rd

**SUBJECT** : Histopathology and cytology

**LESSON PLAN DURATION** : 15 weeks (from 15-09-2022 to 16/01/2023)

**Work Load Per week** : Lectures-4, Practical -3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **THEORY** | | |  |
| **Week** | **Lecture Day** | **Date** | **TOPIC (ASSINGNMET/TEST)** | **Practical** |
| 1st |  |  | Introduction and definition of  Histology Histopathology, Biopsy Autopsy, Autolysis, Putrefaction | 1. Reception of specimen, labeling and preserving the specimen |
|  |  | Unfixed Tissue preparations  Imprint methods – Impression, Smears, Teased preparation,  Squashed preparation,  Frozen section |
|  |  | Fixed Tissue preparations  Paraffin embedding,  Celloidin embedding,  Gelatin embedding Reception, recording, labeling and preservation of histological specimen |
| 2nd |  |  | Fixation (Histological Specimens) | 1. Preparation of various smears by unfixed methods    * Imprint smears    * Teased smears    * Squashed smears |
|  |  | Classification of fixatives  Composition of various fixatives, Advantages and disadvantages |
|  |  | Processing (by Paraffin Technique) Dehydration |
| 3rd |  |  | Infilteration and impregnation | 1. Preparation of different fixatives with special emphasis on preparation of formaline based fixatives |
|  |  | Automation: Histokinete (automatic tissue processor)  - its types, working, |
|  |  | Automation: Histokinete (automatic tissue processor)  - its care and maintenance |
| 4th |  |  | Microtome Types, Advantages and disadvantages | 1. Preparation of paraffin blocks from various tissue pieces and labeling |
|  |  | Microtome Knives and Various types of knives, Sharpening of knives Honing technique, Stropping technique, |
|  |  | Automation: Automatic knife sharpener –uses, care and maintenance, Uses of abrasives and lubricants, Introduction to disposable blades - their advantages and disadvantages. |
|  |  | Use of tissue floatation bath,Use of various adhesive media and lifting of sections to the slide  Errors /cutting faults in sections and their remedies |
|  |  | Theory of staining, Principle and mechanism of routine stain (Haematoxylin and Eosin) |
|  |  | Various steps of staining (Haematoxylin and Eosin)  - Deparaffinization  - Hydration  - Nuclear Staining  - Differentiation  - Blueing  - Counterstaining  - Dehydration  - Clearing and Mounting  - Results |
| 6th |  | | Automation: Use of automatic stainer and coverslipper  Mountants Various types of mounting media (aqueous, resinous) Advantages and Disadvantages  Cell Defination and function and Structure  Multiplication (Mitosis and Meiosis ) | 1. Practice of lifting of sections on the slides |
|  | | | | |
| 7th |  | | Exfoliative Cytology Introduction  Preparation of vaginal & cervical smears  Collection and Processing of specimen for cytology  - Urine  - Sputum  - CSF (Cerebro Spinal Fluid)  - Other fluids  Fixation (Cytological Specimen) Definition  and Various types of Cytological fixatives  Advantages and Disadvantages | 1. Performing H&E staining on sections and mounting of tissue sections |
| 8th |  |  | Principle, Technique and interpretation of results in  - May Grunwald & Giemsa staining | 1. Demonstration of cell using buccal smear/urine sample |
|  |  | - Haematoxylin and Eosin staining  - Role of Laminar air-flow and cytotechnician in cytology |
|  |  | Revision of unit 4, 5 & 6 |
| 9th |  |  | Revision of unit 7, 8 & 9 | 1. Processing of sputum sample for malignant cytology |
|  |  | Assignment 1st |
|  |  | Revision of unit 10, 11 & 12 |
|  |  | Assignment 2nd |
| 10th |  |  | Revision of unit 13, & 14 | 1. To perform PAP stain on given smear |
|  |  | Revision of unit 7, 8 & 9 |
|  |  | Assignment 3rd |
|  | | | | |
| 11th |  |  | Revision of Cytology | 1. To perform MGG stain on given smear |
|  |  | Revision of Whole Syllabus |
|  |  | FAQ’s in syllabus HPL |
| 12th |  |  | Revision of Whole syllabus | 1. To perform H&E on given smear |
|  |  | Revision of Whole syllabus |
|  |  | Revision of Whole syllabus |
| 13th |  |  | Preparation of vaginal & cervical smears | 1. To demonstrate various automation by use of brochures, charts etc |
|  |  | Haematoxylin and Eosin staining |
|  |  | Revision of Histopathology |
| 14th |  |  | Revision of Whole Syllabus | 1. Revision |
|  |  | Revision of Histopathology |
|  |  | Revision of Cytology |
|  | | | | |
| 15th |  |  | Revision of Histopathology | 1. Revision |
|  |  | Revision of Cytology |
|  |  | Revision of Whole Syllabus |

**LESSON PLAN**

**NAME OF FACULTY** :

**DISCIPLINE** : DMLT

**SEMESTER** : 3rd

**SUBJECT** : Clinical Biochemistry III

**LESSON PLAN DURATION** : 15 weeks (from 15-09-2022 to 16/01/2023)

**Work Load Per week** ` : Lectures- 3, Practical -3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WEEK** | **THEORY** | | **PRACTICAL** | |
|  | **LECTURE DAY** | **TOPIC (ASSINGNMET/TEST)** | **PRACTICAL DAY**  **(Each day for 3 hours)** | **TOPIC** |
| 1st | 1 | Formation of bile pigments | 1st | Serum bilirubin estimation |
| 2 | Formation and excretion of bilirubin |
| 3 | Conjugated and unconjugated bilirubin |
| 2nd | 4 | Principle and procedures of serum bilirubin estimation (Direct & Indirect) | 2nd | Phosphorus estimation |
| 5 | Reference values  Clinical significance |
| 6 | Revision |
| 3rd | 7 | SGOT and SGPT introduction | 3rd | Calcium estimation |
| 8 | Principle and procedures of estimation SGOT |
| 9 | Principle and procedures of estimation SGPT |
| 4th | 10 | Reference values  Clinical significance | 4th | Renal clearance tests |
| 11 | Revision |
| 12 | Assignment and Test of unit 1 and 2 |
| 5th | 13 | ALP and ACP introduction. | 5th | SGOT estimation |
| 14 | Principle and procedures of estimation ALP |
| 15 | Principle and procedures of estimation ACP |
| 6th | 16 | Reference values Clinical significance |  | SGPT estimation |
| 17 | Revision |
| 18 | Serum Amylase Introduction |
| 7th | 19 | Principle and procedures of estimation | 7th | ALP estimation |
| 20 | Reference values  Clinical significance |
| 21 | Serum Calcium and Phosphorus introduction |
| 8th | 22 | Principle and procedures of estimation | 8th | ACP estimation |
| 23 | Reference values  Clinical significance |
| 24 | Revision |
| 9th | 25 | Test and Assignment | 9th | Total cholesterol estimation |
| 26 | Lipid Profile Introduction |
| 27 | Formation of cholesterol  High density and low density cholesterol |
| 10th | 28 | Principles and procedures of estimation | 10th | Total cholesterol estimation |
| 29 | Reference value Clinical significance |
| 30 | Triglycerides, principle and procedure of estimation |
| 11th | 31 | Importance of various ratios of HDL | 11th | Triglyceride estimation |
| 32 | Importance of various ratios of LDL |
| 33 | Importance of various ratios of VLDL |
| 12th | 34 | Revision | 12th | Estimation of HDL and calculation of VLDL and LDL |
| 35 | Urinary Proteins and Creatnine |
| 36 | 24 hr. urinary proteins and creatnine estimation |
| 13th | 37 | Reference values Clinical significance | 13th | Estimation of HDL and calculation of VLDL and LDL |
| 38 | Revision |
| 39 | Renal Function Tests (Renal clearance Tests) Inroduction |
| 14th | 40 | Renal clearance Tests | 14th | Urinary protein and creatinine estimation ( 24 hr) |
| 41 | Urea clearance Test |
| 42 | Creatnine clearance test |
| 15th | 43 | Clinical significance | 15th | Estimation of serum amylase |
| 44 | Revision |
| 45 | Test And Assignment |

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | **Lesson plan** | |  |  |
| Name of the Faculty | | : | |  | |  |  |
| Discipline | | : | | DMLT | |  |  |
| Semester | | : | | 3rd | |  |  |
| Subject | | : | | Transfusion Medicine | |  |  |
| Lession Plan Duration: | | | | 15 weeks (from 15/09/2022 to16/01/2023) | |  |  |
| Work load ( Lecture / practical ) per week ( n hours) = Lecture=3, Practical=2 | | | | | | |  |
|  |  |  |  | |  |  |  |
| WORK | THEORY |  |  | |  | Practical |  |
|  |  |  |  | |  |  |  |
|  | Lecture Day |  | Topic (Including assignment/test} | |  | Practical | Topic |
|  |  |  |  | |  | Day |  |
| 1st | 1 |  | Historical introduction to Transfusion | |  | L1 | Performing ABO blood grouping by |
|  |  |  | medicine (blood banking | |  |  | Slide & Tube Test |
|  | 2 |  | Definition of antigen and antibody | |  |  |  |
|  | 3 |  | Classification of antigens | |  |  |  |
| 2nd | 4 |  | Classification of antibodies. | |  | L2 | Performing-Rh grouping by Slide & |
|  |  |  |  | |  |  | Tube technique |
|  | 5 |  | Introduction to ABO blood grouping | |  |  |
|  |  |  |  |  |
|  |  |  |  | |  |  |  |
|  | 6 |  | Antigens and antibodies involved in | |  |  |  |
|  |  |  | ABO blood grouping | |  |  |  |
| 3rd | 7 |  | Principle and procedure of ABO blood | |  | L3 | Performance of Coombs Test by |
|  |  |  | grouping Slide method | |  |  | Direct method |
|  | 8 |  | Principle and procedure of ABO blood | |  |  |  |
|  |  |  | grouping Tube method | |  |  |  |
|  | 9 |  | Various blood sub groups ( A1,A2, A1B, | |  |  |  |
|  |  |  | A2B) | |  |  |  |
| 4th | 10 |  | Assignment | |  | L4 | Performance of Coombs Test by |
|  |  |  |  | |  |  | Indirect method |
|  | 11 |  | Introduction to Rh Blood Group System | |  |  |
|  |  |  |  |  |
|  |  |  |  | |  |  |  |
|  | 12 |  | Antigen and antibody involved in Rh | |  |  |  |
|  |  |  | blood grouping | |  |  |  |
| 5th | 13 |  | Principle and procedure of Rh grouping | |  | L5 | Cross Matching (compatibility |
|  |  |  |  | |  |  | testing) by Major testing |
|  | 14 |  | Variant of D antigen | |  |  |
|  |  |  |  |  |
|  |  |  |  | |  |  |  |
|  | 15 |  | Types and composition of various | |  |  |  |
|  |  |  | anticoagulants | |  |  |  |
|  |  |  |  | |  |  |  |
| 6th | 16 |  | Advantages and disadvantages of | |  | L6 | Cross Matching (compatibility |
|  |  |  | various anticoagulants | |  |  | testing) by Minor testing |
|  |  |  |  | |  |  |  |
|  | 17 |  | Criteria for selection of Donor | |  |  |  |
|  |  |  |  | |  |  |  |
|  | 18 |  | Screening of blood donor for Blood | |  |  |  |
|  |  |  | Collection and storage | |  |  |  |
| 7th | 19 |  | Characteristics of ideal blood donor. | |  | L7 | Preparation of anticoagulants – |
|  |  |  |  | |  |  | ACD (Acid Citrate Dextrose) – |
|  | 20 |  | Blood collection procedure | |  |  |
|  |  |  |  | CPD ( Citrate Phosphate Dextrose) - |
|  |  |  |  | |  |  |
|  | 21 |  | Transportation and storage | |  |  | CPDA (Citrate Phosphate Dextrose |
|  |  |  |  | |  |  | Adenine) |
|  |  |  |  | |  |  |  |
| 8th | 22 |  | Screening of blood donors for MP | |  | L8 | Malarial Parasite test by Thick |
|  |  |  |  | |  |  | smear preparation |
|  | 23 |  | Staining of blood film for MP | |  |  |  |
|  |  |  |  | |  |  |  |
|  | 24 |  | Slide test for VDRL | |  |  |  |
|  |  |  |  | |  |  |  |
| 9th | 25 |  | VDRL Buffer Saline test | |  | L9 | Malarial Parasite test by Thin |
|  |  |  |  | |  |  | smear preparation |
|  | 26 |  | ELISA based HIV test | |  |  |
|  |  |  |  |  |
|  |  |  |  | |  |  |  |