Lesson Plan

Name of theFaculty : Sumit Pannu

Discipline : MLT

Semester :1st

Subject : ANATOMY AND PHYSIOLOGY-I

Lesson Plan Duration : 15 Weeks (from July-2018 to November -2018) Work Load (Lecture/Practical) per week (n hours): Lecture= 03,Practical=4

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| --- | --- | --- | --- | --- |
| Week | Theory | | Practical | |
| Lecture  Day | Topic  (including assignment / test) | Practical  Day | Topic |
| 1st | 1st | Introduction Human Body | 1 | Study of various parts of body through demonstration |
| 2nd | Structure and functions of animal  cell. |
| 3rd | Do |
| 2nd | 4th | Various definitions related to anatomy and physiology. | 2 | Study of tissue. |
| 5th | Assignment and test |
| 6th | Introduction to different types of  tissue. |
| 3rd | 7th | Epithelial tissue, structure and  function | 3 | Study of different types of Tissue. |
| 8th | Nervous tissue, structure and  function |
| 9th | Connective tissue, structure and  function |
| 4th | 10th | Muscular tissue, structure and  function | 4 | Internal structure of Bone. |
| 11th | Bone & Cartilage, structure and  function |
| 12th | Assignment and test |
| 5th | 13th | Structure and function of Skin | 5 | Study of different parts of skin. |
| 14th | Accessory organs of Skin |
| 15th | Assignment and test |
| 6th | 16th | Introduction to skeleton system and various parts | 6 | Study of various Bones. |
| 17th | Classification of bones and their structure |
| 18th | Do |
| 7th | 19th | Joints and their classification | 7 | Study of various Joints |

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| --- | --- | --- | --- | --- |
|  | 20th | Major Joints of Body |  |  |
| 21th | Assignment and test |
| 8th | 22th | Introduction to digestive system  and various organs of digestion | 8 | Study of Stomach and small intestine. |
| 23th | Structure and function of stomach |
| 24th | Structure and function of small intestine. |
| 9th | 25th | Structure and function of liver | 9 | Study of Liver through demonstration. |
| 26th | Structure and function of pancreas |
| 27th | Structure and function of salivary glands |
| 10th | 28th | Process of digestion and absorption | 10 | Study of Digestive System and its process. |
| 29th | Classification of vitamins and their role in body |
| 30th | Classification of minerals and their role in body |
| 11th | 31th | Assignment and test | 11 | Study of Respiratory system through demonstration |
| 32th | Introduction to Respiratory system and its various parts |
| 33th | Structure of lungs, trachea, alveoli, histology ofall |
| 12th | 34th | Respiration ,its classification and mechanism | 12 | Study of various parts of Excretory System. |
| 35th | Gaseous exchange in the body |
| 36th | Regulation of respiration, BMR |
| 13th | 37th | Various volumes and capacities  related to respiration | 13 | Study of Kidneys, ureter and urinary bladder through demonstration. |
| 38th | Assignment and test |
| 39th | Introduction to Excretory System,  its organs |
| 14th | 40th | Structure of Kidneys, ureter and  urinary bladder | 14 | Structure of nephron |
| 41th | Structure of nephron |
| 42th | Formation of urine and its  composition |
| 15th | 43th | Assignment and test | 15 | Revision of practicals. |
| 44th | Solving of previous question papers |
| 45th | Solving of previous question papers |

**Lesson Plan**

Name of theFaculty : ANOOP SINGH Discipline : MLT

Semester :1st

Subject : BIOCHEMISTRY-I

Lesson Plan Duration : July-2018 to Dec-2018

Work Load (Lecture/Practical) per week (in hours): 3 (T) + 2 G1 (P) + 2 G2 (P) = 7 X 1hours = 7 hours

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| **Week** | **Theory** | | **Practical** | |
| **Lecture Day** | **Topic**  **(including assignment / test)** | **Practical Day** | **Topic** |
| **1st** | 1 | Introduction to biochemistry | **1** | General introduction and safety measures in clinical biochemistry laboratory |
| 2 | Definition and importance of biochemistry |
| 3 | SI units and their Uses |
| **2nd** | 4 | Volumetric apparatus and their calibration | **2** | Cleaning of Glassware |
| 5 | Introduction about glassware and plasticware |
| 6 | Cleaning and care of laboratory glassware |
| **3rd** | 7 | Cleaning and care of laboratory plasticware | **3** | Handling and maintenance of Balance |
| 8 | Introduction about cleaning agents |
| 9 | Different cleaning agents |
| **4th** | 10 | Methods of cleaning | **4** | Handling and maintenance of Centrifuge |
| 11 | Methods of storage |
| 12 | Assignment-1 (Unit 1 & 2) |
| **5th** | 13 | Class Test 1 (Unit 1 & 2) | **5** | Handling and maintenance of Colorimeter |
| 14 | Introduction about various instruments used  in clinical biochemistry laboratory |
| 15 | Introduction about principle and working of  analytical balance |
| **6th** | 16 | Electrical/ Electronic balance | **6** | Handling and maintenance of Glucometer |
| 17 | Handling and care of balance |
| 18 | Introduction about centrifuge |
| **7th** | 19 | Principle and working of centrifuge | **7** | Handling and maintenance of Ion Selective Electrode |
| 20 | Handling and care of centrifuge |
| 21 | Introduction about colorimeter |
| **8th** | 22 | Principle and working of colorimeter | **8** | Handling and maintenance of Distillation Plant |
| 23 | Handling and care of colorimeter |
| 24 | Introduction about spectrophotometer |
| **9th** | 25 | Principle and working of spectrophotometer | **9** | Collection of capillary blood |
| 26 | Handling and care of spectrophotometer |
| 27 | Introduction about Ion-Selective Electrodes |
| **10th** | 28 | Principle and working of Ion-Selective  Electrodes | **10** | Collection of Venous blood |
| 29 | Concept of flame photometer |

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|  | 30 | Introduction about glucometer |  |  |
| **11th** | 31 | Principle and working of glucometer | **11** | Separation of Serum |
| 32 | Handling and care of glucometer |
| 33 | Principle, working and care of Distillation  Plant |
| **12th** | 34 | Principle, working and care of deionizer  apparatus | **12** | Separation of Plasma |
| 35 | Assignment-2 (Unit 3) |
| 36 | Class Test 2 |
| **13th** | 37 | Introduction about Blood and its fraction | **13** | Preparation of Protein Free Filtrate (PFF) |
| 38 | Separation of Serum |
| 39 | Separation of Plasma |
| **14th** | 40 | Different Protein Precipitating reagents | **14** | Practical Revision |
| 41 | Preparation of protein free filtrate (PFF) |
| 42 | Collection and preservation of Blood |
| **15th** | 43 | Collection and preservation of Urine | **15** | Practical Test |
| 44 | Collection and preservation of Stool and  other body fluids |
| 45 | Assignment & Class Test - 3 (Unit 4 & 5) |

Lesson plan

Name oftheFaculty: Anoop Singh

Discipline : DMLT

Semester : 1st

Subject : Haematology-I

LessionPlanDuration: 15 weeks (from July, 2018 to Nov,2018)

Work load ( Lecture / practical ) per week ( n hours) = Lecture=3, Practical=4

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| --- | --- | --- | --- | --- |
| WORK | THEORY | | Practical | |
| Lecture Day | Topic (Including assignment/test} | Practical  Day | Topic |
| 1st | 1 | Introduction to haematology | L1 | Demonstration of various parts of centrifuge |
| 2 | Various glassware used in haematology  labs |
| 3 | Various plasticware used in  haematology labs |
| 2nd | 4 | Hb tube, Hbpipette, RBC pipette, WBC pipette) | L2 | Functioning and care of Centrifuge |
| 5 | Introduction to Apparatus and Instruments  used in hematology lab |
| 6 | Introduction to Water bath |
| 3rd | 7 | Introduction to Blood cell counter | L3 | Demonstration of various parts of microscope |
| 8 | Various types of Blood cell counter |
| 9 | Blood Mixer |
| 4th | 10 | Introduction to Centrifuge | L4 | Functioning and care of microscope |
| 11 | Various types of centrifuge |
| 12 | Assignment |
| 5th | 13 | Introduction to Haemopoeisis | L5 | Preparation of  ACD (Acid Citrate Dextrose) |
| 14 | Introduction of Erythropoiesis |
| 15 | Different Stages of Erythropoiesis |
| 6th | 16 | Introduction to leucopoeisis | L6 | Preparation of  CPD ( Citrate Phosphate Dextrose) |
| 17 | Different Stages ofleucopoeisis |
| 18 | Introduction to thrombopoeisis |
| 7th | 19 | Different Stages of thrombopoeisis | L7 | Preparation of  CPDA (Citrate Phosphate Dextrose Adenine) |
| 20 | Definition, composition of Blood |
| 21 | functions of blood |

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| 8th | 22 | Assignment | L8 | Collection of venous and capillary blood |
| 23 | Definition and various types of  anticoagulants |
| 24 | Mode of action and preparation of  Anticoagulants |
| 9th | 25 | Merits and demerits of anticoagulants | L9 | Preparation of Giemsa stain |
| 26 | Collection and preservation of blood |
| 27 | Collection of blood; by venous method |
| 10th | 28 | Collection of blood by capillary method | L10 | Preparation of Leishman’s stain |
| 29 | Various equipment used for collection of  blood samples |
| 30 | Safety measures at the time of sampling  and collection |
| 11th | 31 | Preservation of processed blood samples  in hematology | L11 | Preparation of Wright stain |
| 32 | Introduction to Diluting fluid |
| 33 | Uses, preparation and composition of Hb  Diluting fluid |
| 12th | 34 | Uses, preparation and composition of  TLC Diluting fluid | L12 | Preparation of peripheral blood film |
| 35 | Uses, preparation and composition  ofPlatelets Diluting fluid |
| 36 | Uses, preparation and composition of  RBC Diluting fluid |
| 13th | 37 | Introduction to Romanowsky stains | L13 | To stain a peripheral blood film by Giemsa stain |
| 38 | Theory and preparation of leishman stain |
| 39 | Theory and preparation of Giemsa stain |
| 14th | 40 | Theory and preparation of Wright stain | L14 | To stain a peripheral blood film by Leishman’s stain |
| 41 | Choice of slide and spreader and preparation of blood film |
| 42 | Characteristics of good film preparation |
| 15th | 43 | Staining procedure of Romanowsky  stains | L15 | To stain a peripheral blood film by Wright stain |
| 44 | Effects of pH on staining |
| 45 | Assignment |

**Lesson Plan**

Name of Faculty :Sumit Pannu

Discipline : MLT

Semester :Ist

Subject : CM (CLINICAL MICROBIOLOGY -I)

Lesson Plan Duration : 15 WEEKS

Work Load ( Lecture/Practical) per week (in hours): 3+4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| week | Theory | | Practical | |
| Lecture  day | Topics (including assignment/test) | Practical  day | Topics |
| 1 | 1 | Introduction to microbiology, history | 1 | Demonstration of safety rules (universal precautions) ina microbiology laboratory |
| 2 | relationship of micro-organisms to man |
| 3 | safety guideline in a microbiology laboratory |
| 2 | 4 | Morphology of bacteria | 2 | Preparation of cleaning agents and techniques of cleaning of glass and plastic ware. Disposal of  cultures |
| 5 | anatomy of bacterial cell(including  spores, flagella and capsule |
| 6 | Bacterial Growth curve |
| 3 | 7 | Nutrition of bacteria | 3 | Preparation of material for sterilization in autoclave and hot air oven |
| 8 | Classification of micro-organisms -  General |
| 9 | Classification of micro-organisms -  Biological |
| 4 | 10 | Assignment -1 | 4 | Use of sterilization by autoclave and hot air oven |
| 11 | Sterilization introduction |
| 12 | autoclave and hot air oven its structure  and functioning |
| 5 | 13 | preventive measures, controls and  sterilization indicators, | 5 | Use of filtration for sterilization (Seitz) |
| 14 | sterilization by radiation and filtration  (seitz) |
| 15 | Antiseptics and Disinfectants Definitions,  types, |
| 6 | 16 | properties, use of disinfectants and  antiseptics, | 6 | Handling and use of different types of microscopes |
| 17 | efficiency testing of disinfectants; use of  laminar flow – principle and function |
| 18 | Classtest-I |
| 7 | 19 | Microscopy,Care, principle, working of simple and compound microscope | 7 | Staining techniques: Gram, Albert’s, Ziehl – Neelsen’s |
| 20 | preventive maintenance of simple and compound microscope |
| 21 | principle of dark ground, fluorescent |

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|  |  | microscope |  |  |
| 8 | 22 | phase contrast and electron microscope | 8 | Demonstration of Spore, capsule and flagella staining |
| 23 | Assignment -II |
| 24 | Staining techniques introduction, methods  of smear preparation |
| 9 | 25 | Gram stain, AFB stain, | 9 | Demonstration of motility (Hanging drop/Semi solid method) |
| 26 | Albert’s stain and |
| 27 | special staining for spore, |
| 10 | 28 | capsule and flagella | 10 | Demonstrationof Preparation and sterilization of various solid and liquid culture media (including standardization of pH), nutrient agar, nutrient broth, blood agar, chocolate agar, macconkey agar, lowenjensen and  special media |
| 29 | Class test-II |
| 30 | Culture Media-Liquid and solid media |
| 11 | 31 | defined and synthetic media | 11 | Aerobic and anaerobic culture methods (use of anaerobic jars) |
|  | 32 | routine laboratory media (basal, enriched, selective, enrichment, indicator, and  transport media) |
| 33 | Assignment- III |
| 12 | 34 | Bacterial culture and culture techniques | 12 | Biochemical tests for identification of bacteria: Principle, procedure and interpretation of following biochemical tests – Catalase, coagulase, oxidase, indole, MR, VP, Urease, citrate, carbohydrate utilization test and motility – demonstration of commercial available rapid  biochemical test |
| 35 | Inoculations of culture media, |
| 36 | aerobic and anaerobic culture, |
| 13 | 37 | isolation of pure cultures and disposal of  cultures of bacteria by microscopic examination | 13 | Antimicrobial susceptibility testing by Stokes disc diffusion method |
| 38 | Colony characteristics |
| 39 | Bio-chemicals such as: carbohydrate |
| 14 | 40 | utilization tests Catalase, oxidase,  coagulase | 14 | Handling and use of different types of microscopes |
| 41 | indole, Citrate, MR and VP,Urease) |
| 42 | Motility demonstration methods |
| 15 | 43 | Class test-III | 15 | Use of sterilization by autoclave and hot air oven |
| 44 | Antimicrobial susceptibility of bacteria by  disc diffusion method |
| 45 | Viva voice |