***AITO Topics Planned at DHGMCH, Diamond Harbour for the Academic Year 2021-2022***

***Phase 1 Students***

1. **PY3.1** Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines. : **Physiology and Anatomy**
2. **PY3.7** Describe the different types of muscle fibres and their structure: Physiology and Anatomy
3. **PY4.1** Describe the structure and functions of digestive system: **Physiology and Anatomy**
4. **PY5.1** Describe the functional Anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.: **Physiology and Anatomy**
5. **PY9.1** Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.: **Physiology and Anatomy**
6. **PY10.1** Describe and discuss the organization of nervous system: **Physiology and Anatomy**
7. **PY10.2** Describe and discuss the functions and properties of synapse, reflex, receptors: **Physiology and Anatomy**
8. **PY10.3** Describe and discuss somatic sensations & sensory tracts: **Physiology and Anatomy**
9. **PY10.4** Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus: **Physiology and Anatomy**
10. **PY10.4** Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus: **Physiology and Anatomy**
11. **PY10.5** Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS): **Physiology and Anatomy**
12. **PY10.6** Describe and discuss Spinal cord, its functions, lesion & sensory disturbances: **Physiology and Anatomy**
13. **PY 10.7** Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities: **Physiology, Psychiatry and Anatomy**
14. **PY 10.11** Demonstrate the correct clinical examination of the nervous system: Higher functions, Sensory system, motor system, reflexes, Cranial Nerves in a normal volunteer or simulated environment: **Physiology and Anatomy**
15. **BI6.13** Describe the functions of the kidney, liver, thyroid and adrenal glands: Biochemistry, **Physiology and Anatomy**
16. **BI6.14** Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).: **Biochemistry, Physiology and Anatomy**
17. **BI6.15** Describe the abnormalities of kidney, liver, thyroid and adrenal glands: **Biochemistry, Physiology and Anatomy**
18. **AN 3.1** Classify muscle tissue according to structure & action: **Anatomy and Physiology**
19. **AN 5.1** Differentiate between blood vascular and lymphatic system: **Anatomy and Physiology**
20. **AN 5.2** Differentiate between pulmonary and systemic circulation: **Anatomy and Physiology**
21. **AN 5.6** Describe the concept of anastomoses and collateral circulation with significance of end-arteries: **Anatomy, General Medicine and Physiology**
22. **AN 5.7** Explain function of meta-arterioles, precapillary sphincters, arteriovenous anastomoses: **Anatomy and Physiology**
23. **AN 5.8** Define thrombosis, infarction & aneurysm: **Anatomy and Physiology**
24. **AN 7.2** List components of nervous tissue and their functions: **Anatomy and Physiology**
25. **AN 7.3** Describe parts of a neuron and classify them based on number of neurites, size & function: **Anatomy and Physiology**
26. **AN 7.5** Describe principles of sensory and motor innervation of muscles: **Anatomy, General Medicine and Physiology**
27. **AN 7.7** Describe various types of synapse: **Anatomy and Physiology**
28. **AN 21.9** Describe & demonstrate mechanics and types of respiration: **Anatomy and Physiology**
29. **AN 22.2** Describe & demonstrate external and internal features of each chamber of heart: **Anatomy and Physiology**
30. **AN 22.3** Describe & demonstrate origin, course and branches of coronary arteries: **Anatomy and Physiology**
31. **AN 22.4** Describe anatomical basis of ischaemic heart disease: **Anatomy, General Medicine and Physiology**
32. **AN 22.7** Mention the parts, position and arterial supply of the conducting system of heart: **Anatomy, General Medicine and Physiology**
33. **AN 24.1** Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy: **Anatomy, General Medicine and Physiology**
34. **AN 24.2** Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate: **Anatomy, General Medicine and Physiology**
35. **AN 24.3** Describe a bronchopulmonary segment: **Anatomy, General Medicine and Physiology**
36. **AN 25.3** Describe fetal circulation and changes occurring at birth
37. **AN 25.4** Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot’s tetralogy & 4) tracheo-oesophageal fistula: **Anatomy, General Medicine, Pediatrics and Physiology**
38. **AN 25.5** Describe developmental basis of congenital anomalies,transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta: **Anatomy, General Medicine, Pediatrics and Physiology**
39. **AN 25.9** Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart: **Anatomy, General Medicine, Pediatrics and Physiology**
40. **AN 56.2** Describe circulation of CSF with its applied anatomy: **Anatomy, General Medicine and Physiology**
41. **AN 57.4** Enumerate ascending & descending tracts at mid thoracic level of spinal cord: **Anatomy, General Medicine and Physiology**
42. **AN 57.5** Describe anatomical basis of syringomyelia: **Anatomy, General Medicine and Physiology**
43. **AN 58.3** Enumerate cranial nerve nuclei in medulla oblongata with their functional group: **Anatomy and Physiology**
44. **AN 58.4** Describe anatomical basis & effects of medial & lateral medullary syndrome: **Anatomy, General Medicine and Physiology**
45. **AN 59.1** Identify external features of pons: **Anatomy and Physiology**
46. **AN 60.3** Describe anatomical basis of cerebellar dysfunction: **Anatomy, General Medicine and Physiology**
47. **AN 61.3** Describe anatomical basis & effects of Benedikt’s and Weber’s syndromme: **Anatomy, General Medicine and Physiology**
48. **AN 69.2** Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere: **Anatomy, General Medicine and Physiology**
49. **BI 1.1** Describe the molecular and functional organization of a cell and its sub-cellular components.: **Biochemistry and Physiology**
50. **BI 3.7** Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate) .: **Biochemistry and Physiology**
51. **BI 5.2** Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies: **Biochemistry, Pathology, General Medicine and Physiology**
52. **BI 6.3** Describe the common disorders associated with nucleotide metabolism: **Biochemistry and Physiology**
53. **BI 6.7** Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these: **Biochemistry, General Medicine and Physiology**
54. **BI 6.9** Describe the functions of various minerals in the body, their metabolism and homeostasis**: Biochemistry, General Medicine and Physiology**
55. **BI 6.11** Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism: **Biochemistry, Pathology, General Medicine and Physiology**
56. **BI 6.12** Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance: **Biochemistry, Pathology, General Medicine and Physiology**
57. **BI 6.13** Describe the functions of the kidney, liver, thyroid and adrenal glands: **Biochemistry, Pathology, General Medicine and Physiology**
58. **BI 6.14** Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands) : **Biochemistry, Pathology, General Medicine , Physiology and Human Anatomy**
59. **BI 6.15** Describe the abnormalities of kidney, liver, thyroid and adrenal glands: **Biochemistry, Pathology, General Medicine , Physiology and Human Anatomy**
60. **BI 10.4** Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses: **Biochemistry, Pathology, General Medicine and Physiology**
61. **BI 11.4** Perform urine analysis to estimate and determine normal and abnormal constituents: **Biochemistry, General Medicine and Physiology**
62. **BI10.5** Describe antigens and concepts involved in vaccine development. **Biochemistry, Pathology, Pediatrics, Microbiology**
63. **PY 3.11** Explain energy source and muscle metabolism: **Biochemistry and Physiology**
64. **PY 4.2** Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion**: Biochemistry and Physiology**
65. **PY 4.4** Describe the physiology of digestion and absorption of nutrients: **Biochemistry and Physiology**
66. **PY 4.7** Describe & discuss the structure and functions of liver and gall bladder: **Biochemistry and Physiology**
67. **PY 4.8** Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests: **Biochemistry and Physiology**
68. **PY 4.9** Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus Hirschsprung's disease**: Biochemistry, General Medicine and Physiology**
69. **PY 7.8** Describe & discuss Renal Function Tests: Biochemistry and Physiology
70. PY 8.4 Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas: **Biochemistry and Physiology**

***Phase 2 Students***

1. **MI 1.7** Describe the immunological mechanisms in health: **Microbiology & Pathology**
2. **MI 1.8** Describe the mechanisms of immunity and response of the host immune system to infections: **Microbiology & Pathology**
3. **MI 2**.1 Describe the etiologic agents in rheumatic fever and their diagnosis: **Microbiology & Pathology**
4. **MI 2.2** Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis: **Microbiology & Pathology**
5. **MI 2.3** Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis: **Microbiology & Pathology**
6. **MI 2.4** List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia: Microbiology & Pathology
7. **MI 2.5** Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala azar, malaria, filariasis and other common parasites prevalent in India: **Microbiology & Pathology**
8. **MI 2.7** Describe the epidemiology, the etio-pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV: **Microbiology & Pathology**
9. **MI 3.1** Enumerate microbial causative agents of Diarrhoea and dysentery Describe epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents: **Microbiology & Pathology**. .
10. **PA 7.5** Describe the immunology and the immune response to cancer: **Pathology & Microbiology**
11. **PA 9.1** Describe the principles and mechanisms involved in immunity: **Pathology, Pediatrics & Microbiology**
12. **PA 9.2** Describe the mechanism of hypersensitivity reactions: **Pathology & Microbiology**
13. **PA9.3** Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection: **Pathology & Microbiology**
14. **PA9.6** Define and describe the pathogenesis and pathology of HIV and AIDS: **Pathology, Medicine & Microbiology**
15. **PA10.1** Define and describe the pathogenesis and pathology of malaria: **Pathology & Microbiology**
16. **PA10.2** Define and describe the pathogenesis and pathology of cysticercosis: **Pathology & Microbiology**
17. **PA10.3** Define and describe the pathogenesis and pathology of leprosy: **Pathology & Microbiology**
18. **PH1.43** Describe and discuss the rational use of antimicrobials including antibiotic stewardship program: **Pharmacology, Medicine, Pediatrics & Microbiology**
19. **PH1 45** Describe the drugs used in MDR and XDR Tuberculosis: **Pharmacology, Respiratory Medicine & Microbiology**
20. **PH1.46** Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs: **Pharmacology, Dermatology & Microbiology**
21. **PH1.47** Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALAAZAR, amoebiasis and intestinal helminthiasis: **Pharmacology, Medicine & Microbiology**
22. **PH1.48** Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV: **Pharmacology, & Microbiology**
23. **CM3.6** Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program: **Community Medicine, and Microbiology**
24. **CM3.7** Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures: **Community Medicine, and Microbiology**
25. **CM 19.1** Define and describe the concept of Essential Medicine List (EML).: **Community Medicine, and Pharmacology**
26. **CM 19.2** Describe roles of essential medicine in primary health care: **Community Medicine, and Pharmacology**
27. **CM 19.3** Describe counterfeit medicine and its prevention: Community Medicine, and Pharmacology
28. **CM14.1** Define and classify hospital waste: **Community Medicine, and Microbiology**
29. **CM14.2** Describe various methods of treatment of hospital waste: **Community Medicine, and Microbiology**
30. **CM14.3** Describe laws related to hospital waste management: **Community Medicine, and Microbiology**
31. **MI 1.6** Describe the mechanisms of drug resistance, methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy: **Microbiology and Pharmacology**
32. **MI 3.3** Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them: **Microbiology, Pathology and Pharmacology**
33. **MI 3.5** Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis: **Microbiology and Pharmacology**
34. **MI 3.6** Describe the etio-pathogenesis of Acid Peptic Disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD: **Microbiology, Pathology and Pharmacology**
35. Vector Borne Diseases – Horizontal Integration between **Community Medicine, Microbiology and Pharmacology**
36. Sexually Transmitted Infections - Horizontal Integration between **Community Medicine, Microbiology and Pharmacology**
37. Malaria - Horizontal Integration between **Community Medicine, Microbiology, Pharmacology and Pathology**
38. Scrub Typhus - Horizontal Integration between **Community Medicine, Microbiology and Pharmacology**
39. **FM14.7** Demonstrate & identify that a particular stain is blood and identify the species of its origin.: **FMT, Physiology, Pathology**
40. **FM14.8** Demonstrate the correct technique to perform and identify ABO & Rh blood group of a person.: **FMT, Physiology, Pathology**
41. **FM 4.11**- Describe and discuss euthanasia: **AETCOM, FMT and Pharmacology**
42. **FM 4.12** Discuss legal and ethical issues in relation to stem cell research: **AETCOM, FMT and Pharmacology**
43. **FM 4.17** Describe and discuss ethical Principles: Respect for autonomy,non-malfeasance, beneficence & justice: **AETCOM, FMT and Pharmacology**
44. **FM 4.22** Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath: **AETCOM, FMT and Pharmacology**
45. **FM 4.23** Describe the modified Declaration of Geneva and its relevance: **AETCOM, FMT and Pharmacology:**
46. **FM 4.25** Clinical research & Ethics Discuss human experimentation including clinical trials: **AETCOM, FMT and Pharmacology:**
47. **FM 4.26** Discuss the constitution and functions of ethical committees: **AETCOM, FMT and Pharmacology:**
48. **FM 4.27** Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals: **AETCOM, FMT and Pharmacology**.