M.Phil Forensic Sciences (Part-I)
PAPER I
TABLE OF SPECIFICATIONS

With reference to letter No ION 286 dated 10-12-2018 the new TOS for Forensic Sciences are as follows:

Distribution of MCQ's and SEQ's with respect to the importance of topics

Topics	No. of MCQ's	No. of SEQ's
Paper 1		
I. GENERAL FORENSIC SCIENCES a) Introduction to Forensic science b) History and Nature of Forensic Science c) Crime Scene and Death Investigation , Introduction to crime scene, the scene of the crime versus the crime scene, protecting the scene: the first responder, the crime scene investigator d) Latent Prints, Introduction to basic principles and techniques of fingerprints as applied to crime scenes, forensic evidence and identification. Methods of recognition, proper collection of known and latent fingerprints, processing, classification and comparison. Understand and demonstrate the basic principles and history of fingerprints. Understand and demonstrate the fingerprint patterns and how to apply to the Henry fingerprint classification system. The proper method of developing fingerprints from a verity of different surfaces. e) Questioned Documents, Fire and Explosive Examination. f) Friction ridges, Impression evidence, Blood splatter patterns	**40**	**4**

2• **Biological Evidence and Serology** a) Introduction to Biological evidence, Collection and Storage of Biological Evidence, Chemical and Microscopic Analysis of Biological Stains, Screening Evidence for Biological Stains in Forensic Casework, Species of Origin and Serology Separation Techniques, ABO Grouping and Secretor Status, Biological Markers of Forensic Significance, Introduction to blood Spatter • **Trace Evidence:** a) Application of Locard's principle of exchange in criminal cases, b) Study of crime scene; collection, preservation & dispatch of trace evidence material to lab. c) Examination of biological specimens of forensic importance like Blood, Semen, Saliva, Vomitus, Breath, Urine, Hair & their examination in the laboratory.	**20**	**2**
3• **Forensic Analysis of DNA** a) DNA Introduction, Quality Assurance and Performance Optimization, DNA Isolation, Assessment of Extracted DNA and Amplification, DNA typing, Introduction to Data Collection and Interpretation, DNA data Bank, Significance of a Match and Calculating Statistics, Evaluation and Triage of DNA Samples, Paternity and Identification.	**20**	**1**

M.Phil Forensic Sciences (Part-I)
PAPER II
TABLE OF SPECIFICATIONS

With reference to letter No ION 286 dated 10-12-2018 the new TOS for Forensic Sciences are as follows:

Distribution of MCQ's and SEQ's with respect to the importance of topics

Topics	No. of MCQ's	No. of SEQ's
Paper 2		
I. SPECIAL FORENSIC MEDICINE a) Special Traumatology: Regional injuries, firearm & explosive injuries, Transportation injuries (Road traffic & railway accidents, Air crashes), Police torture injuries & custodial deaths. b) Environmental Hazards: Burns, electrocution, lightning, radiation, cold, heat, starvation. c) Asphyxial deaths: Classification & physio-chemico-pathological changes in asphyxia deaths. Suffocation, hanging, strangulation, throttling, sexual Asphyxia, Traumatic Asphyxia, Environmental Asphyxia, drowning, Scuba diving. d) Medico-legal aspects of marriage: Virginity, impotence, pregnancy, delivery, legitimacy, contraception, Artificial insemination, abortion (Criminal & justified), nullity of marriage. e) Sexual Offences: Classification of sexual offences, Examination of offender & victim, Collection, preservation & dispatch of biological material to lab. Sexual perversions. f) Crime against New-born/Infant/child: Infanticide, child abandonment, child abuse, still births, cot deaths. g) Forensic Sciences: Introduction to Forensic Sciences, scope & importance of various disciplines like Photography, Dactylography, Odontology, Anthropology, Questioned documents, tool marks, Ballistics & DNA Fingerprinting. h) Forensic aspect of various specialties: Anaesthesia, Surgery, Radiology, Radiotherapy, etc.	**20**	**2**
I. FORENSIC SEROLOGY a) Morphology of human & other species RBCs. b) Blood group systems & Law of inheritance of blood group, their role in resolving paternity & maternity issues. c) Forensic importance of Blood stains and their detection in lab. d) Principles & techniques of various serological tests. e) Application of Precipitin Test for detection of human tissues. f) Secretors & Non-Secretors.	**15**	**2**

g) Method of forward & backward blood grouping & cross matching. h) Hazards of blood transfusion.		
III. FORENSIC BIOCHEMISTRY a) Clinical Biochemistry Biochemical changes in muscles, blood, CSF & vitreous after death. Biochemisty of asphyxia and drowning. Biochemical changes in wounds. b) Analytical Biochemistry Analytical techniques for detection of drugs & poisons. Principles of modern techniques like Spectrophotometry, Flame photometry, Chromatography, & Electrophoresis. c) Genetics Structure of DNA, its replication, profiling & its role in Forensic Medicine. Methods of collection & preservation of samples to be sent to DNA laboratory.	**10**	**1**
IV. FORENSIC TOXICOLOGY a) **General Toxicology:** • Definition, scope, & classification of Poisons. • Drug dependence. • Diagnosis of intoxicated cases in acute and chronic exposure in living and dead. • Factors affecting outcome of an intoxicated patient. • General management of case of poisoning & the legal duties of a Doctor in handling such cases. b) **Specific Poisons:** Poisons/drugs of abuse prevailing in our society & their medico-legal aspects. • Alcohol • Opiates & other Narcotics • Salicylates & Paracetamol • Hypnotics & Sedatives • Stimulants – Cocaine & Cannabis	**15**	**2**

• Poisonous Plants – Aconite, Belladonna, Hyoscyamus, Stramonium, Digitalis, Ergot, Mushrooms, Nux Vomica, Oleander, & Tobacco • Venomous Insects & snakes • Inorganic elements – Antimony, Arsenic, Lead, Mercury, Phorsphorus • Volatile poisons, Carbon-monoxide, & Hydro-Carbons • Cyanides • Corrosives – Hydrochloric Acid, Nitric Acid, Sulfuric Acid, Oxalic Acid, Carbolic Acid, & Alkalies • Pesticides, Herbicides & Insecticides	**20**	