Syllabus for the post of

(1) Professor, Forensic Medicine, Class-I

(Advt. No.: 33/2019-20)

(2) Associate Professor, Forensic Medicine, Class-I

(Advt. No.: 68/2019-20)

(3) Assistant Professor, Forensic Medicine, Class-I

(Advt. No.: 100/2019-20)

Marks-200 Questions-200 Medium: English

1. **General Principles of Forensic Medicine and Toxicology**

   Identify the role of anatomy, physiology, biochemistry, microbiology, pathology, blood bank, psychiatry, radiology, forensic science laboratory as well as other disciplines of medical science to logically arrive at a conclusion in medico-legal autopsies and examination of medico-legal cases. The basic principles of techniques used in toxicological laboratory namely TLC, GLC, ASS, HPLC and Breath Alcohol Analyzer.

2. **Basic Sciences and allied Subjects**

   i. **Anatomy:** Anatomy of parts and organs of the body which are important from the medico-legal aspect. Surface and regional anatomy of head, neck, chest and abdomen. Gross anatomy and blood supply of heart, brain, lungs, spleen, liver and kidneys. Gross anatomy of male and female genitalia. The comparative anatomy of male and female skeleton. Perform histological examination of various tissues. The development of foetus.

   ii. **Physiology and Biochemistry:** Mechanism of phenomena that are important in the body from the medico-legal viewpoint. Mechanism of fluid and electrolyte balance, thermoregulation in new-born and adults, endocrine functions. Physiology of sexual behaviour. Physiological functioning of circulatory system, digestive system, respiratory system,

haemopoietic system, central nervous system and reproductive system including pregnancy.

iii. **Pathology:** Pathophysiology of vital processes and response mechanisms that modulate tissue and organ reaction to all forms of injury and have a bearing on ante mortem and post-mortem appearance in medico-legal cases, assessment of the duration of injuries and correlate trauma and disease. Pathology of inflammation and repair, immunity and hypersensitivity, Thrombosis and embolism, electric and ionizing radiation injuries, genetic factors in disease, deficiency disorders and malnutrition. Pathology of myocardial infarction, congenital heart diseases, tuberculosis of lungs, cirrhosis of liver, diseases of glomeruli and tubules and interstitial; tissues of Kidney, tumours, endocrine disorders, venereal diseases, spontaneous intracranial hemorrhages. The pathology of sudden death. Local and systemic response to trauma and patho-physiology of shock. Pathology of common infections and infestations of medico-legal significance.

iv. **Dentistry:** Adequate knowledge of dentistry for solution of medico-legal problems like, injuries, age determination and identification.

v. **Radiology:** Adequate knowledge of radiological procedures for solution of medico-legal problems.

3. Fundamentals of Forensic Medicine:

The general forensic principle of ballistics, serology, analytical toxicology and photography. Interpret the scene of crime. Role of DNA profile and its application in medico-legal practice. Examine bloodstains for blood grouping, nuclear sexing, HLA typing, seminal stains and hair for medico-legal purpose. Ethical aspects of Forensic Procedures including Narco-analysis, Brain mapping and Polygraph.

4. Medical Ethics and Law (Medical Jurisprudence)

The history of Forensic Medicine. The legal and medico-legal system in India. Medical ethics and the law in relation to medical practice, declarations, oath, etiquette, Medical Council of India, disciplinary control, rights and duties of a registered medical practitioner’s professional misconduct, consent,

confidentiality, medical negligence (including all related issues) and Consumer Protection Act. Medical ethics and law in relation to organ transplantation, biomedical human research and experimentation, human rights, cloning, genetic engineering, human genome, citizen's charter and International codes of medical ethics. The ethics and law in relation to artificial insemination, abortion, antenatal sex, foetus, genetics and euthanasia. Interpret the ethics and law applicable to the human (clinical trials) and animal experimentation. Ethics in relation to elderly, women and children. Medical ethics and law in relation to nursing and other medical services/practices. Understanding about bio-ethics.

5. Clinical Forensic Medicine

Examine, assess legal implications and prepare report or certificate in cases of physical assault, suspected drunkenness, sexual offences, consummation of marriage and disputed paternity. Collect, preserve and dispatch the specimen/material to the concerned authority and interpret the clinical and laboratory findings which are reported. Examine injured person, prepare medico-legal report and initiate management. Determine the age and establish identity of an individual for medico-legal purpose. Examine a person and assess disability in industrial accidents and diseases. Perform examination and interpret findings for medico-legal purposes in cases pertaining to pregnancy, delivery, artificial insemination, abortion, sterilization, Impotence, AIDS and infectious disease. Normal and abnormal sexual behaviour and its medico-legal implications. Examine and assess the medical fitness of a person for insurance, government service, sickness and fitness on recovery from illness. Examine medico-legal problems related to clinical disciplines of medicine and allied subjects, Pediatrics, Surgery and allied subjects, ENT, Ophthalmology, Obstetrics and Gynecology, Dermatology and Anesthesiology. Examine medico-legal problems related to children, women and elderly. Identify the cases of torture and violation of human rights and issues thereto.

6. Forensic Pathology

Apply the principles involved in methods of identification of human remains by race, age, sex, religion, complexion, stature, hair, teeth, anthropometry,

dactylography, foot prints, hairs, tattoos, poroscopy and superimposition techniques. Perform medico-legal postmortem and be able to exhume, collect, preserve and dispatch specimens or trace evidence to the appropriate authority. Diagnose and describe the pathology of wounds, mechanical and regional injuries, ballistics and wound ballistics, electrical injuries, lightening, neglect and starvation, thermal injuries, deaths associated with sexual offences, pregnancy, delivery, abortion, child abuse, dysbarism and barotraumas. patho-physiology of shock and neurogenic shock. patho-physiology of asphyxia, classification, medico-legal aspects and post-mortem findings of different types of asphyxial deaths. Diagnose and classify death, identify the signs of death, postmortem changes, interpret autopsy findings, artifacts and results of the other relevant investigations to logically conclude the cause, manner (suicidal, homicidal and accidental) and time of death. Manage medico-legal responsibilities in mass disasters involving multiple deaths like fire, traffic accident, aircraft accident, rail accident and natural calamities. Demonstrate post-mortem findings in infant death and to differentiate amongst live birth, still birth and dead born. Perform post-mortem examination in cases of death in custody, torture and violation of human rights. Perform post-mortem examination in cases of death due to alleged medical negligence as in operative and anesthetic deaths.

7. Toxicology

The law relating to poisons, drugs, cosmetics, narcotic drugs and psychotropic substances. Examine and diagnose poisoning cases and apply principles of general management and organ system approach for the management of poisoning cases. The basic principles of pharmacokinetics and pharmacodynamics of poisonous substances. The toxic hazards of occupation, industry, environment and the principles of predictive toxicology. Collect, preserve and dispatch material/s for analysis, interpret the laboratory findings and perform the Medico-legal formalities in a case of poisoning. Demonstrate the methods of identification and analysis of common poisons. The signs, symptoms, diagnosis and management of common acute and chronic poisoning due to: Corrosives, Non-metallic substances, Insecticides and weed killers, Metallic substances, Vegetable and organic irritants,

Somniferous compounds, Inebriant substances, Deliriant substances, Food Contamination/adulteration, Substances causing spinal and cardiac toxicity, Substances causing asphyxia (Asphyxiants), Household toxins, Toxic envenomation, Biological and chemical warfare, Environmental intoxicants, Occupational intoxicants.

8. **Forensic Psychiatry**

   Explain the common terminologies of forensic importance in Psychiatry. The medico-legal aspects of Psychiatry and mental health. medico-legal aspects of drug addiction. Role of Psychiatry in criminal investigation, punishment and trial. The civil and criminal responsibilities of a mentally ill person.

9. **Indian Medical Council (Professional Conduct ETIQUETTE and Ethics) Regulations, 2002.**

10. **Current Trends and Recent Advancements in the field of Forensic Medicine.**