

Forensic Medicine & Toxicology

Marks distribution of Assessment of Forensic Medicine: Total marks – 300

- Written =100 (MCQ+ SEQ+ SAQ+ FA)
- MCQ-20 (50% SBA+50% MTF),
- SEQ (Structured Essay Question)-20, • SAQ-50 (Short Answer Question) +
- FA (formative assessment) marks 10
- Structured Oral Examination= 100
- Practical=50, OSPE= 40 & Others (PM report, Injury certificate & Practical assignment) =10

Forensic Medicine & Toxicology

Section -01: Introduction to Forensic Medicine
and
Recent advances in Forensic Medicine

Contents

Core

- Introduction to Forensic Medicine& its subdivision; medical jurisprudence
- Recent advances in Forensic Medicine
 - Emerging issues in sex verification and disorder of sex development (DSD)
 - Medico-legal issues in **consent**;
 - **Euthanasia**: legal, social and humanitarian aspect
 - Legal and ethical issues in **medical records**.
 - Legal issues in End life care & Palliative care
 - **Age of child**: legal perspective
 - Analytic and Clinical toxicology
- Mass disaster: Introduction, effect, management strategies, disaster victim identification (DVI).
- Sports medicine (type, mechanism, management and prevention of sports injuries).
- Forensic science:
 - **Trace evidence** (blood stain, blood group, hair, semen);
 - **DNA Profiling**.

Optional:

- Forensic science:
 - criminalistics,
 - crime scene investigation,
 - forensic lab.
- Cybercrime, Basics of ICT.
- History and landmarks of Forensic medicine
- HLA typing and Bioinformatics

Forensic Medicine & Toxicology
Section 3: Medical Jurisprudence (Medical ethics)

Contents

Core

• **Medical ethics:**

- WMA declaration Geneva declaration, international code of medical ethics
- BMDC: Bangladesh Medical & Dental Council (BMDC), its constituents, functions and disciplinary control. professional death sentence.
- Right & privilege, Duties.
- Rights and privileges of a doctor.
- Rights of patients.
- Duties of a medical practitioner toward patients & society, Professional secrecy & privileged communication.
- Doctor-patient relationship; Component; Skills
- Fairness and Equity; Specific Health Issues; Jargons in the field of medical ethics.
- Code of Medical ethic of BMDC
- Malpractice
- Ethical malpractice: Professional Infamous conduct
- Professional (Medical) Malpractice: civil and criminal Negligence
- Precautions, prevention & defenses against professional negligence.
- Vicarious liability, Contributory negligence, corporate negligence; Res ipsa loquitor. Novus actus interne.
- Medical maloccurance; Product liability.
- Applied ethics and research ethics
- Soft skill and humanities; End life care; palliative care

Additional:

- Code and law of medical ethics, its history
- Tokyo declaration 1975, Helsinki declaration. Other important WMA declaration
- Ethical review board. Procedure of ethical review in a research proposal. Dealing ethical dilemma and conflict.
- Organ transplant Act. MTP Act. Consumers Protection Act
- Legal provision related to medical practice.

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Section 4: Forensic Pathology

Contents

Core

01. Autopsy:

- Definition; Type; prerequisite; objective;
- Procedure: external, internal (opening body cavity, 3rd incision, removal of viscera, internal exam) and laboratory procedure; Report writing; opinion.
- Collection and dispatch of specimen.
- Inquest report: definition, type, content, magistrate inquest.
- Modern morgue.
- Exhumation: definition, procedure; importance; 2 nd autopsy.
- Forensic anthropology: Post Mortem exam of mutilated and skeletal remains.

Additional:

- Virtual autopsy procedure, Academic autopsy;
- Special Autopsy & disposal of radioactive corpse.
- Recommendation of autopsy as per human right commission.
- Clinical autopsy: Legal formalities, Procedure; Precaution; Importance
- Methods of preserving dead body.

Core:

02. Death

- Mood and manner of death (natural/ unnatural)
- Asphyxia; syncope; coma
- PM changes after death:
 - Immediate
 - Early change: skin change, eye change, cooling of body, hypostasis, rigor mortis
 - Late change: putrefaction, adipocere formation and mummification
- Post mortem artifacts: Resuscitative artifact, agonal artifact and postmortem artifact.
- Sudden death.
- Custodial death.
- Anesthetic and operative deaths.

Additional:

- Radioactive carbon(C14) estimation
- Forensic entomology
- Death due to occupational and environmental hazards
- Dead body management & handling in disaster

Core

03. Infanticide:

definition, legal bearing, cause of death, mode of death.

- a. Dead born (def, Spalding sign, maceration)
- b. Live born
- c. Still born

Additional:

- Precipitated labor
- Cot death, SIDS, feticide

<ul style="list-style-type: none"> • Death due to neglect
<p>Core:</p> <p>04. Violent asphyxia death:</p> <ul style="list-style-type: none"> ➤ Hanging: def, types, cause of death, mechanism of death, PM finding, ML imp. ➤ Strangulation: definition, type, throat ling, ligature strangulation, cause of death, PM finding, ML imp. ➤ Drowning: Definition, types, pathophysiology, PM findings, cause of death, ML imp. ➤ Suffocation: smothering, choking, and gagging.
<p>Core</p> <p>05. Wound: (L-6hrs; T-3hrs)</p> <ul style="list-style-type: none"> • Transportation wound: <ul style="list-style-type: none"> ➤ Trauma in RTA; cause, preventive device (helmet, seat belt syndrome); ➤ Injuries sustained by pedestrian; driver, motorcyclist; passenger; Crush syndrome. ➤ Objectives of autopsy in traffic wounds. • Firearm and explosives: <ul style="list-style-type: none"> ➤ Fire arms, cartridge composition, fire arm injuries (entry and exit) according to range, medico-legal aspect. ➤ Bomb blast and explosion • Electrocution and lightning. • Autopsy (mass disaster) protocol <p>Additional:</p> <ul style="list-style-type: none"> • Transportation: Trauma in Railway disaster; River traffic, Air crush.

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Section 5: Clinical Forensic Medicine

Contents
<p>01. Death:</p> <ul style="list-style-type: none"> ➤ Basic of death: definition, type, ML imp of somatic death; signs of death; cause, manner, mechanism of death; Brain death: types, signs, diagnostic criteria. ➤ Declaration of death. ➤ Suspended animation; presumption of death
<p>02. Wound:</p> <ul style="list-style-type: none"> • Medico-legal aspect: injurywound, hurt, battery; grievous hurt;cause of death due to wound; homicide; defense wound;fabricated wound. • Mechanical wound: abrasion,bruise,laceration, incised wound and puncture wound • Regional injury: <ul style="list-style-type: none"> ○ Head injury: Scalp, skull fracture, Intra cranial hemorrhage, brain injuries. ○ whiplash injury.Crush syndrome. • Domestic Violence: Battered Baby syndrom(BBS); Manchausen syndrome; violence against women. • Thermal injury: Heat (Burn scald) and cold. • Torture • Neglect and starvation <p>Additional: Chest injury, abdominal injury, genital injury and extremity injury.</p> <p>Core</p>

03. Forensic aspect of sex:

- Medico-legal aspect related with marriage.
- Impotency, sterility; Medico-legal aspect.
- Legitimacy; Paternity and maternity.
- Hymen: Type, cause of rupture; medico-legal aspect.
- Virginitv and defloration.

Sexual offences:

- Natural: Rape, Adultery, Incest.
- Unnatural: sodomy, Lesbianism, Buccal coitus, Bestiality
- Investigations: collection & dispatch of specimen (HVS, stain, hair, blood); radiology

Medico-legal report preparation: Impotency, fixation of paternity & maternity, report on sexual violence; rape.

Sexual perversions: sadism, masochism, voyeurism, necrophilia, necrophage.

Additional:

- Psychosexual instinct;
- legal provisions related.

Forensic Medicine & Toxicology Section 6: Identification

Contents

CORE:

Identification:

- Definition, types, objectives, and method of identification.
- Identification traits; Identity of living persons & dead bodies.
- Race, religion, sex.
- Age: medico-legal importance; estimation of age.
- Tattoo, scar, stature, mole, birthmark
- Stature, occupational marks.
- Trace Evidence.
- Forensic Dactylography.
- Forensic Radiology: introduction, scope and medicolegal issues.
- Forensic Odontology: introduction, scope and forensic issues.
- Bite marks; Modern technologies used in identification
- Identification in mass death & examination of human remains.

Additional:

- X-ray identification.
- Superimposition. Lip print
- Brain fingerprinting;
- Lie detector.
- Biometrics; retina scan, Iris scan.
- Forensic Voice analysis
- Questioned document examination
- Forensic ballistic

Contents

Forensic aspect reproduction:

- Artificial insemination and other artificial methods of conception with medico-legal implication (Inflowing).
- Surrogated mother & baby.
- Pregnancy: Medico-legal importance; Signs of pregnancy & duration. PM finding of pregnancy
- Delivery: signs of recent & remote delivery in living & dead.
- Abortion: types, methods, complication, management duties of medical practitioner.
- Indication of therapeutic abortion. Spontaneous, Artificial (justifiable and criminal abortion).

Additional:

- Feticide and viability; IUF death.
- MTP act;
- Infertility & its medico-legal issues; Invitro Fertilization

Section-08

CORE:

- Definition of forensic psychiatry. Classification of mental disorder, lucid interval, testamentary capacity.
- Important terms of forensic psychiatry. Elements of forensic psychiatry (psychosis, neurosis, delirium, delusion, illusion, hallucination, confabulation, phobia, impulse etc.)
- Issues of incompetency to stand trial/event.
- Criminal responsibility of an insane person.
- Personality disorder related with crime.
- Aggressive behavior and medicolegal issues
- Diminished responsibility.
- Civil and Social responsibilities.
- Substance abuse affecting mental state
- True insanity and feigned insanity:
- Rules in relation to forensic psychiatry.

Additional:

- Mental health act
- Advances in forensic Psychiatry
- Psychosexual instinct

Forensic Medicine & Toxicology

Section-09: Forensic Toxicology

Contents

Toxicology

CORE:

General aspects of poisoning:

- Forensic Toxicology. Legal provisions related to Poisons & poisoning.
- General aspect of toxicology.
- Poisons. Classification of poisons.
- Factors modifying the action of poison.
- Antidote. • Principles of Management of acute & chronic poisoning.
- Prevention of domestic poison & therapeutic poison.

Specific Poisoning:

- Corrosive poisons: strong acids and alkalis.
- Acetaminophen (paracetamol) poisoning.
- Metallic poisons: Lead, Arsenic, Copper and Mercury.
- Deliriant: Datura, Cannabis.
- Somniferous agents: Opium and its derivatives; Hypnotics- Barbiturate.
- Inebriates: Alcohol, methyl alcohol.
- Petroleum product: Kerosene oil.
- Gaseous poisons: Carbon monoxide, Chlorine, CO₂, Cooking gas (methane).
- Insecticides: Organo-phosphorus comp (OPC) and chloro-compound.
- Snake Bite.
- Drug dependence and drug abuse. Doping.
- Food poisoning.
- Potka fish (Puffer fish)

Additional:

- Spinal poison; Cardiac poison; cocaine;
- Organic irritant: ricinuscommunis; ergot; arbusprecatorius; calatropis; cantharides; scorpion.
- Clinical toxicology; Environmental toxicology; Occupational toxicology; Analytic toxicology.

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Section-10: PRACTICAL

Contents

A. Demonstration: (18hrs)

- Demonstration & observation of ten medico-legal autopsies.
- Observation/examination of intoxicated persons in the ward (Indoor).
- Flip chart
- Weapons: Blunt weapons; Sharp Cutting weapons; sharp pointed
- Dangerous weapon: firearms
- Forensic photograph:
 - Identity: Tattoo; fingerprint; Barr body & Davidsons body
 - Thanatology: Marbling, degloving, demonstration rigor mortis
 - Asphyxia death: Ligature marks; FB in trachea (Choking) Hanging; Strangulation; Partial hanging; smothering; sexual asphyxia; traumatic asphyxia; diatoms; drowning.

<ul style="list-style-type: none"> ○ Trauma: Hesitation cut; fabricated injury; incised wound; cut throat wound with hesitation mark; defense wound; shotgun injury; pattern abrasion; graze abrasion; contact rifle entry wound; chop wound; pugilistic attitude; soot particle in the trachea; Lacerated wound; ● Toxicology specimen(poison) <ul style="list-style-type: none"> ▪ Corrosives:Hcl,H2SO4, HNO3, carbolic acid;Oxalic acid; Salicylic acid; corrosive alkali. ▪ Inorganic: lead; copper; Arsenic; Mercury; Phosphorus. ▪ Organic: chili seeds; Snake. ▪ Systemic: <ul style="list-style-type: none"> ➤ CNS: inebriants (Alcohol; methyl alcohol); deliriant (Datura, Cannabis Indica); Poppy (Opium); Nux vomica ➤ Insecticides: OPC; Chloro-compound ▪ Domestic: kerosene; naphthalene; harpic; savlon; Dettol.
<p>B. Exercise: (22yrs)</p> <ul style="list-style-type: none"> ▪ Preparation of certificates on following Medico-legal situations: <ul style="list-style-type: none"> ○ Prepare 5-10 Injury report ○ Prepare 10 Postmortem reports ○ Prepare death certificate according to ICD-10 with recording of death note. ○ Prepare medical (fitness & sickness) certificate; discharge certificate; Birth certificate. ○ Prepare report on Insanity. ○ Prepare age estimation report. ○ Prepare report of sexual assault. ▪ Recoding Dying declaration. ▪ Examine for estimation of the age of a person. ▪ Examine victim of physical assault. ▪ Examine victim of sexual assault. ▪ Examine a drunkenness case ▪ Management of poisoning case ▪ Age estimation from bones by X-rays. ▪ Assignment.
<p>C. Observation</p>
<p>D. Experiment:</p>
<p>E. Role play: Drunkenness Infamous conduct</p>
<p>F. Presentation</p>
<p>G. Problem solving:</p>

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Section-11: Observation of ten Medico-legal Autopsies

Contents
<ul style="list-style-type: none"> ▪ College authority will contact and fix the schedule with suitable time & date to attend. ▪ Transport will be provided by the college authority

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Section-12: Day visit-06

Contents
Visit to court.
Visit to police station
One stop Crisis Center (OCC)
DNA lab. Forensic lab