



MULTISYSTEM -I

MODULE

MBBS Year-3 (Academic Year 2020-2021)

KMU Central Curriculum Committee
Khyber Medical University, Phase V, Hayatabad | Peshawar

Table of Contents

Themes	3
General Learning Objectives	3
Theme -1: (Vomitting & blurred vision)	3
Theme-2: (Palpitation, fainting and death)	9
Theme-3: (Heredity and Cancers).....	17
Practical work	24

Themes

S. No	Themes	Duration
1	Vomiting and blurred vision	1 week
2	Palpitation, fainting and death	1 week
3	Heredity and Cancers	2 Weeks

General Learning Objectives

- 1) Explain the functional organization of Autonomic Nervous system (ANS)
- 2) Describe the basic and clinical pharmacology of drugs acting on the ANS
- 3) Describe anticancer drugs
- 4) Describe the basic and clinical pharmacology of Eicosanoids.
- 5) Describe the basic and clinical pharmacology of drugs used for common skin problems.
- 6) Describe the clinical uses of some popular herbal medications.
- 7) Describe single Gene Disorders, cytogenetic disorders and different mutations
- 8) Describe the molecular Genetics Diagnosis
- 9) Define neoplasia and nomenclature of tumors
- 10) Describe characteristics of benign and malignant tumors
- 11) Describe epidemiology of cancer
- 12) Describe carcinogens, their types and clinical aspects of neoplasia
- 13) Describe diagnosis of cancer, grading and staging of tumors
- 14) Describe pathways for tumor spread and tumor immunity
- 15) Describe the protocols and procedures of autopsy.
- 16) Describe Thanatology and its medicolegal implications.
- 17) Describe general principles of Toxicology and their role in medicolegal sciences.
- 18) Describe the fundamentals of Research Ethics

Subject	Topic	S. No	Specific Learning objectives At the end of this module, the students of year-3 will be able to:
Theme-1 (Vomiting and Blurred vision)			
Physiology	Functional organization of ANS- and overview	1	Describe the functional organization of ANS and its related neurotransmitters and receptors
Pharmacology	Introduction to the pharmacology of Autonomic Nervous System (ANS)	2	Enlist major autonomic neurotransmitters.
		3	Enlist various types of cholinergic, adrenergic and dopaminergic receptors discovered so far.
		4	Describe the organ system distribution of autonomic receptors.
		5	Describe presynaptic receptors (autoreceptors and heteroreceptors).
		6	Describe inotropy, chronotropy and dromotropy.
	Cholinomimetic drugs (Parasympatho-mimetic drugs)	7	Classify cholinomimetic drugs.
		8	Enlist the naturally-occurring cholinomimetic alkaloids.
		9	Enlist major organophosphate compounds.
		10	Enlist the organophosphates used as “Nerve gases”.
		11	Describe the pharmacokinetics of cholinomimetics with emphasis on metabolism and duration of action.

		12	Describe the mechanism of action of directly-acting and indirectly-acting cholinomimetics.
		13	Describe the organ system effects of directly-acting and indirectly-acting cholinomimetics with special reference to their effects on receptors.
		14	Describe the clinical uses of cholinomimetics.
		15	Describe the cholinomimetics used in glaucoma and Alzheimer's disease.
		16	Describe the use of Edrophonium to differentiate between cholinergic crisis and Myasthenic crises.
		17	Describe the adverse effects of cholinomimetics.
		18	Describe the clinical manifestations of organophosphate poisoning.
		19	Describe the clinical manifestations of mushroom poisoning.
		20	Explain the pharmacological rationale of prophylactic use of Pyridostigmine in situations where chemical warfare with nerve gases is anticipated.
		21	Enlist the contraindications of cholinomimetics.
	Anticholinergic drugs (Parasympatholytics)	22	Classify anticholinergic drugs (Parasympatholytics/Cholinoceptor-blocking drugs).
		23	Describe belladonna alkaloids with reference to their natural sources.
		24	Describe the pharmacokinetics of antimuscarinic drugs with emphasis

			on metabolism and duration of action.
		25	Describe the mechanism of action of antimuscarinic drugs.
		26	Describe the organ system effects of antimuscarinic drugs with special reference to their effects on receptors.
		27	Describe the clinical uses of antimuscarinic drugs.
		28	Describe the drug treatment of organophosphate poisoning.
		29	Enlist cholinesterase regenerating compounds.
		30	Describe “aging” of the phosphorylated enzyme complex and its clinical importance regarding the management of organophosphate poisoning.
		31	Describe the drug treatment of mushroom poisoning.
		32	Describe the adverse effects of antimuscarinic drugs.
		33	Describe atropine fever.
		34	Name the antidote for atropine poisoning.
		35	Describe the contraindications of antimuscarinic drugs.
	Ganglion-blocking drugs	36	Enlist major ganglion-blocking drugs.
		37	Describe the mechanism of action of ganglion-blocking drugs.
		38	Describe the organ system effects of ganglion-blocking drugs.
		39	Enlist the clinical uses of ganglion-blocking drugs.

		40	Enlist the adverse effects of ganglion-blocking drugs.
Forensic Medicine	Poison & related laws	41	Define a poison
		42	Describe laws related to poisoning or drug use.
	Legal duties of a Registered Medical Practitioner in a case of poisoning	43	Explain legal, ethical, and moral duties of Registered Medical Practitioner in a case of poisoning.
	Fate of Poison	44	Enumerate different routes of administration of poisons.
		45	Describe Biotransformation.
		46	Enlist the route of excretion of poisons
	Diagnosis of poisoning in living and dead	47	Describe the protocols of diagnosing poisoning in living and dead
	Antidotes	48	Define and classify antidotes
		49	Describe the mechanism of action of different antidotes
	Steps of management in a case of poisoning	50	Describe general steps of management in a case of poisoning
	Organophosphate group	51	Describe the mechanism of action of commonly used organophosphate poisons.
		52	Describe the characteristics finding for organophosphate group in postmortem examination.
		53	describe different signs and symptoms for organophosphate group.
		54	Describe the medico-legal importance for organophosphate group.

		55	Explain fatal dose, fatal period, and treatment for organophosphate poisons.
Community medicine	Drug abuse	56	Define drug abuse and related terms
		57	Classify drugs used for abuse
		58	Describe causes of drug abuse
		59	Describe the effects of drug addiction on health
		60	Describe the prevention and control of drug addiction/abuse in community
	Child Abuse	61	Define child abuse
		62	Describe different forms of child abuse and its effects
		63	Describe statistics of child abuse
		64	Describe the preventive strategies regarding child abuse
	Smoking	65	Describe the global distribution and increase of smoking
		66	Discuss the causes of smoking
		67	Discuss the effects of smoking on health
		68	Describe preventive and control measures
	International Health	69	Describe International health regulations and their importance
		70	Describe preventive measures for travelers visiting disease endemic areas
PRIME	Research Ethics	71	Define ethics in research
		72	Discuss importance of research ethics
		73	Discuss principles of ethics
		74	Describe the theories of ethics
		75	Discuss research misconduct

Theme-2: (Palpitation, fainting and death)			
Pharmacology	Sympathomimetic drugs	76	Classify sympathomimetic drugs according to the spectrum of adrenoceptors they affect and on the basis of their mode of action (directly-acting and indirectly-acting).
		77	Define Catecholamines with examples.
		78	Describe the pharmacokinetics of sympathomimetic drugs with emphasis on their metabolism.
		79	Describe the mechanism of action of sympathomimetics.
		80	Describe the organ system effects of sympathomimetics with special reference to their effects on receptors.
		81	Compare the effects of Adrenaline, Noradrenaline, Phenylephrine and Isoprenaline on heart rate and blood pressure.
		82	Describe the clinical uses of sympathomimetics.
		83	Describe the drug treatment of Anaphylactic shock.
		84	Describe the dose-dependent effects of Dopamine and its clinical importance.
		85	Describe the sympathomimetic drugs used in the management of glaucoma.
		86	Describe the adverse effects of sympathomimetics.
		87	Describe hypertensive cheese reaction

		88	Enlist the foods with high Tyramine content.
		89	Describe the drug interactions of sympathomimetics with Monoamine oxidase inhibiting drugs.
		90	Describe the treatment of accidental overdose of adrenaline.
	Sympatholytic drugs (Adrenoceptor antagonists)	91	Classify sympatholytic drugs (adrenoceptor antagonists) on the basis of spectrum of adrenoceptors they affect.
		92	Name the prototype α -blocker.
		93	Name the α -blocker having more specificity for prostate muscle.
		94	Describe the mechanism of action of α -blockers.
		95	Describe the organ system effects of α -blockers with special reference to their effects on receptors.
		96	Describe the phenomenon of epinephrine reversal.
		97	Describe the clinical uses of α -blockers.
		98	Describe the adverse effects of α -blockers.
		99	Name the prototype β -blocker.
		100	Enlist the β -blockers with intrinsic sympathomimetic activity (partial agonist activity).
		101	Enlist the β -blockers with membrane stabilising activity (Na channel-blocking activity).
		102	Enlist the β -blockers which have proved to be inverse agonists.

		103	Enlist the β -blockers which are relatively safe in chronic stable heart failure.
		104	Enlist the β -blockers which are relatively safe in asthmatic patients.
		105	Describe the pharmacokinetics of propranolol.
		106	Describe the mechanism of action of β -blockers.
		107	Describe the organ system effects of β -blockers with special reference to their effects on receptors.
		108	Describe the clinical uses of β -blockers.
		109	Describe β -blockers used in the management of glaucoma.
		110	Describe stage fright and name the β -blocker used for its management.
		111	Describe the adverse effects of β -blockers.
		112	Name the antidote for β -blockers' toxicity.
		113	Enlist the contraindications of β -blockers.
		114	Describe the limitations of beta-blockers in patients with Diabetes Mellitus, Hyperlipidemias, Bronchial Asthma and peripheral arterial disease.
		115	Enlist mixed adrenoceptor antagonists (Labetalol and Carvedilol).
		116	Describe the clinical uses of mixed adrenoceptor antagonists.

Forensic medicine	Introduction to autopsy	117	Define Autopsy.
		118	Describe the modified continental system and compare it with other medicolegal systems in the world.
		119	Classify types of Autopsy.
		120	Describe the role of Autopsy in Criminal offences.
		121	Describe section 174 and 176 of the Criminal Procedure Code (CrPC), 1973
	Modern autopsy suite	122	Describe the components of modern autopsy suite
		123	Describe the precautions taken while working in modern autopsy suites
		124	Explain the hazards encountered in modern autopsy suites
	Autopsy Protocol	125	Describe pre-examination in Autopsy.
		126	Describe the protocol of examination of clothes, and external examination in autopsy.
		127	Classify and describe different autopsy incisions.
		128	Describe internal examination in an autopsy.
		129	Describe the procedure to collect different autopsy samples.
		130	Describe the chain of custody.
		131	Describe the steps of writing an autopsy report
		132	Describe autopsy procedure for death due to heat and cold.
	Exhumation	133	Define exhumation.
		134	Describe authorisation of autopsy surgeon for exhumation.

		135	Describe protocol of exhumation.
		136	Describe time limit for exhumation.
		137	Describe the precautions for exhumations.
		138	Describe the procedure to collect samples.
		139	Describe the limitations of exhumations.
		140	Describe the scope of exhumation.
	Skeletonized body	141	Describe the steps of examination of a skeletonized body to assess its race, age, sex and stature
		142	Describe the protocol for autopsy of a skeletonized body
		143	Describe cause of death in such cases.
		144	Describe nature of injury and type of weapon used in such cases.
		145	Describe time since death in such cases.
	Negative autopsy	146	Define negative autopsy.
		147	Describe causes of the negative autopsy.
		148	Describe concealed trauma.
	Autopsy artifacts and hazards	149	Describe autopsy artefacts.
		150	Describe the importance of forensic artefacts.
		151	Describe effect of artefacts on the opinion of post-mortem report.
	Infanticide	152	Describe infanticide and its related law.
		153	Describe the Age of viability and its medico legal significance.
		154	Describe the concept of live birth and separate existence.

		155	Describe the Hydrostatic test and its importance.
		156	Explain Cause of death, i.e. acts of commission and acts of omission
	Autopsy of an infected body	157	Describe the protocols for autopsy of the infected dead body.
		158	Describe the precautions required for autopsy of an infected person.
		159	Enlist the diseases transferred from during autopsy infected dead body
	Autopsy of fragmentary remains	160	Describe autopsy of a fragmentary remains and mutilated body.
		161	Discuss the protocols adopted for autopsy of fragmentary remains
		162	Describe the samples needed for autopsy of fragmentary remains.
	Embalming	163	Define Embalming.
		164	Enlist the chemical used for Embalming.
		165	Describe the procedure for Embalming.
		166	Describe the used of Embalming.
	Thanatology/Death	167	Describe death.
		168	Describe phases of death.
		169	Define brain death.
		170	Describe the criteria of brain death.
		171	Describe the role of EEG/ECG in death.
		172	Explain apparent death.
		173	Describe human tissue act.
		174	Describe medicolegal importance of death.
	Postmortem changes	175	Define Post Mortem changes.

		176	Classify Post-mortem changes.
		177	Describe immediate, early and late changes of post-mortem.
		178	Describe Post-mortem lividity.
		179	Describe the steps to report changes due to post-mortem lividity
	Rigor mortis	180	Define Rigor Mortis.
		181	Describe the mechanism of formation of Rigor mortis
		182	Describe the special features of Rigor Mortis.
		183	Describe time consumed to develop Rigor mortis.
		184	Describe chemical basis of Rigor Mortis.
		185	Describe factors affecting Rigor Mortis.
		186	Describe the conditions that simulate Rigor Mortis.
		187	Describe procedure of its confirmation.
		188	Describe medico legal importance of Rigor Mortis.
	Cooling of dead body (Algor Mortis)	189	Define Algor Mortis?
		190	Describe different methods of recording the temperature of dead body.
		191	Describe the PM body cooling curve?
		192	Describe the formula/calculation used for time since death.
	Late P.M. changes & putrefaction	193	Define putrefaction?

		194	Describe the process of putrefaction
		195	Describe stages of putrefaction.
		196	Describe order of progression in putrefaction.
		197	Describe factors affecting Putrefaction.
		198	Describe casper dictum.
		199	Describe medicolegal importance of putrefaction.
	Maceration	200	Define maceration.
		201	Describe features of maceration.
		202	Discuss differentiation point for maceration
		203	Discuss medicolegal importance of maceration.
	Adipocere formation (Saponification)	204	Define Adipocere formation.
		205	Describe features of Adipocere formation.
		206	Discuss medicolegal importance of Adipocere formation.
	Mummification	207	Define Mummification.
		208	Describe features of Mummification.
		209	Discuss medicolegal importance of Mummification.
Community Medicine	Child labor	210	Define child labor
		211	Describe different types of child labor and its effects
		212	Describe statistics of child labor
		213	Describe governments` actions against child labor
		214	Define IPEC 2011 (international program on elimination of child labor
Medicine	General management of poisons	215	Describe approach to manage a poisoned patient in accident and emergency department

Theme-3: (Heredity and Cancers)			
Pathology	Genetics	216	Define the term mutation, hereditary, congenital, genotype, phenotype, codon, Mendelian disorder
	Mutations	217	Describe various types of mutations
		218	Describe trinucleotide-repeat mutations
		219	Enlist few examples of trinucleotide-Repeat Disorders
		220	Describe mutations in mitochondrial genes
	Transmission pattern of single Gene disorders	221	Enumerate transmission patterns of single gene disorders
		222	Describe biochemical and molecular basis of Autosomal Dominant Disorders
		223	Enlist few examples of Autosomal Dominant Disorders
		224	Describe biochemical and molecular basis of Autosomal Recessive disorder
		225	Enlist few Examples of Autosomal Recessive Disorders
		226	Describe mechanism of transmission of X-Linked disorders
		227	Enumerate examples of X-Linked Disorders
	Biochemical and molecular basis of single gene disorders	228	Discuss enzyme defects and their consequences
		229	Describe defects in receptors and transport system
		230	Describe alterations in structure, functions or quantity of non-enzyme proteins

		231	Describe genetically determined adverse reactions to drugs
	Complex multigeneic disorders	232	Describe multigeneic disorders with examples
	Cytogenetic Disorders involving Autosomes	233	Discuss Trisomy 21 and its molecular basis
		234	Describe diagnostic clinical features of Trisomy 21
	Molecular genetic diagnosis	235	Describe the basic principles of various molecular techniques including PCR, FISH and Southern/Western blotting
		236	Enumerate indications of these techniques.
	Introduction to Neoplasia	237	Define the terms: neoplasia, neoplasm, oncology, tumor, benign tumor, malignant tumor, anaplasia, metaplasia, differentiation and dysplasia.
	Nomenclature of Tumors	238	Describe the basic principle of nomenclature of tumors with respect to tissue of origin, benign and malignant nature
	Characteristics of Benign and Malignant Tumors	239	Describe characteristics of benign and malignant tumors
		240	Differentiate between benign and malignant tumors
		241	Describe characteristics of benign and malignant neoplasms in terms of differentiation, anaplasia, rate of growth, local invasion and metastasis
	Epidemiology of Cancer	242	Describe the epidemiology of cancer with respect to overall incidence of cancer and various

			host factors (age and hereditary) that predisposes to cancer
		243	Discuss the epidemiology of cancer with respect to geographical and environmental factors that predispose to cancer
	Molecular Basis of Cancer	244	Describe the molecular/genetic basis of carcinogenesis
		245	Describe genetic lesions in cancer
		246	Define oncogene, proto-oncogene and Oncoproteins.
	Carcinogenesis	247	Enumerate carcinogens
		248	Describe the process of carcinogenesis
		249	Describe the hallmarks of cancer cells and process involved
		250	Describe the role of p53
	Types of Carcinogens	251	Discuss properties of chemical carcinogens
		252	Describe direct and indirect chemical carcinogens and their mechanism of action
		253	Describe the mechanism of radiation carcinogenesis
		254	Enumerate viral and bacterial carcinogens
		255	Describe mechanism of carcinogenesis by viral and microbial oncogenes
	Clinical Aspects of neoplasia	256	Define cachexia
		257	Describe the clinical features of neoplasia including effects of tumor on host cancer cachexia
		258	Describe the clinical significance of paraneoplastic syndromes

		259	Describe clinical syndromes with respect to its causal mechanism and major forms of underlying cancer
	Diagnosis of Cancer	260	Describe morphologic, biochemical and molecular methods employed for diagnosis of cancer
	Pathways for tumor spread	261	Describe the pathways for spread of tumors like local invasion and metastasis
	Grading and Staging of tumors	262	Describe grading and staging of tumors
	Tumor immunity	263	Discuss host defences against tumors
		264	Describe tumor antigens and anti-tumor effect mechanisms
		265	Describe tumor surveillance and Immune evasion by the tumors
Pharmacology	Anticancer drugs	266	Describe terms like cell cycle-specific drugs and cell cycle-nonspecific drugs.
		267	Describe the role of P-glycoprotein in relation to the development of resistance to cytotoxic drugs.
		268	Classify anticancer drugs.
		269	Describe general adverse effects of anticancer drugs.
		270	Describe the mechanism of action of alkylating agents.
		271	Describe the clinical uses and adverse effects of Busulfan and Cyclophosphamide.
		272	Describe the mechanism of action, clinical uses and adverse effects of Cisplatin.
		273	Describe in general the mechanism of action of antimetabolites.

		274	Describe the mechanism of action, clinical uses, adverse effects and contraindications of Methotrexate, Azathioprine, 6-Mercaptopurine and 5-Fluorouracil.
		275	Describe the drug interaction of Azathioprine and 6-Mercaptopurine with Allopurinol.
		276	Describe the natural source of plant alkaloids Vinblastine and Vincristine.
		277	Describe the mechanism of action, clinical uses and adverse effects of Vinblastine and Vincristine.
		278	Describe the mechanism of action, clinical uses and adverse effects of Doxorubicin, Daunorubicin, Dactinomycin and Bleomycin.
		279	Enlist the anticancer mechanism of action and uses of hormonal agents like Tamoxifen, Flutamide, Goserelin and Aminoglutethimide.
		280	Enlist the drugs of choice for ALL, AML, CLL, CML, Hodgkin's disease, Non-Hodgkin's lymphoma, Ca breast, Ca lung, Ca prostate and Ca stomach.
		281	Describe cancer treatment modalities (primary induction, adjuvant, neo-adjuvant and maintenance chemotherapy)
		282	Describe the antidotes of Methotrexate, Cyclophosphamide and Doxorubicin toxicity.
	Eicosanoids- Prostaglandins	283	Classify eicosanoids.

		284	Describe the mechanism of action of Prostaglandins.
		285	Describe the organ system effects of Prostaglandins.
		286	Describe the clinical uses of Prostaglandins.
		287	Describe the prostaglandins used in the management of glaucoma.
		288	Describe the pharmacologic effects of Thromboxane's ² .
	Dermatologic preparations	289	Describe dermatologic formulations like creams, ointments, gels, lotions, pastes, powders, tinctures and wet dressings.
		290	Describe the choice of dermatologic formulation with reference to the nature of the lesion.
	Drug treatment of scabies	291	Enlist the drugs used for the treatment of Scabies
		292	Describe the method of application of Permethrin, Crothamiton and Benzyl benzoate for treating scabies.
	Drug treatment of Acne vulgaris	293	Enlist the drugs used for treating Acne (including antibiotics and hormonal agents).
		294	Describe the mechanism of action and adverse effects of Benzoyl peroxide, Tretinoin and Isotretinoin.
		295	Describe the teratogenicity of Isotretinoin.
	Drug treatment of Psoriasis	296	Enlist the drugs used for treating Psoriasis.

	??? more Los for this topic for a student of year-3	297	Describe the teratogenicity of Acitretin.
	Herbal medications	298	Describe the terms like herbal medications, botanicals and nutritional supplements with special reference to drug regulatory factors.
		299	Describe the pharmacologic effects and intended uses of Garlic (<i>Allium sativum</i>).
		300	Describe the drug interactions of Garlic with Warfarin and Aspirin.
		301	Describe the possible medicinal use of Kalonji (<i>Nigella sativa</i>).
		302	Describe the pharmacologic effects and intended uses of Ginseng.
		303	Describe the drug interactions of Ginseng with antipsychotic and hypoglycaemic medications.
		304	Describe the intended clinical uses of Coenzyme Q10.
		305	Describe the drug interactions of Coenzyme Q10 with Warfarin.
Community Medicine	Cancers	306	Enlist the common cancers prevalent in Pakistan
		307	Describe the burden and epidemiology of common cancers prevalent globally and in Pakistan
		308	Describe the prevention and control of cancers
		309	Describe various governmental programs and strategies for the prevention of cancers

Practical work			
Pathology	Lipoma	310	Identify the morphological changes occurring in lipoma
	Squamous cell carcinoma	311	Identify morphological changes of squamous cell carcinoma
	Fibro adenoma	312	Enlist points of identification of gross and microscopic features of fibro adenoma of breast
	Karyotyping	313	Demonstrate preparation of Karyogram
		314	Identify gender on the basis of Karyogram
		315	Identify common numerical chromosomal abnormalities on Karyogram
Pharmacology	Introduction to experimental Pharmacology (experiments on isolated piece of rabbit's Ileum)	316	Differentiate between Qualitative and Quantitative experiments.
		317	Recognize various parts of Tissue Organ Bath and describe their functions.
		318	Describe the ingredients and their quantities required for preparing the Tyrode's Solution.
		319	Describe the technique of slaughtering of rabbit and removal of a piece of ileum.
		320	Describe the fixation of piece of ileum in the inner organ bath.
		321	Enumerate the causes of tissue death.
	Ceiling effect for Parasympathomimetic drug (Acetylcholine)	322	Demonstrate ceiling effect for Acetylcholine on the isolated piece of rabbit's ileum by adding proper

			doses of the drug into the inner organ bath.
		323	Interpret the recording of acetylcholine-induced ileal activity on the revolving drum.
		324	Demonstrate washing of the inner organ bath for the subsequent doses of Acetylcholine.
		325	Construct tables and graphs for inference of the results.
	Antagonism between acetylcholine and atropine	326	Demonstrate surmountable antagonism between acetylcholine and atropine on piece of rabbit's ileum by adding proper doses of the drugs into the inner organ bath.
		327	Interpret the recording of acetylcholine- and Atropine-induced ileal activity on the revolving drum.
		328	Construct tables and graphs for inference of the results.
	Ceiling effect for Histamine	329	Demonstrate ceiling effect for Histamine on the isolated piece of rabbit's ileum by adding proper doses of the drug into the inner organ bath.
		330	Interpret the recording of Histamine -induced ileal activity on the revolving drum.
		331	Demonstrate washing of the inner organ bath for the subsequent doses of Histamine.
		332	Construct tables and graphs for inference of the results.
	Antagonism between Histamine and antihistamine	333	Demonstrate surmountable antagonism between Histamine and antihistamine on piece of rabbit's

			ileum by adding proper doses of the drugs into the inner organ bath.
		334	Interpret the recording of Histamine- and antihistamine-induced ileal activity on the revolving drum.
		335	Construct tables and graphs for inference of the results.
	To identify an unknown drug on rabbit's ileum with the help of two known antagonists	336	Demonstrate ceiling effect for the known agonist drug (Acetylcholine or Histamine) on the isolated piece of rabbit's ileum by adding proper doses of the drug into the inner organ bath.
		337	Demonstrate surmountable antagonism between the agonist drug and the unknown antagonists (Atropine and antihistamine) on piece of rabbit's ileum by adding proper doses of the drugs into the inner organ bath.
		338	Interpret the recording of drug-induced ileal activity on the revolving drum.
		339	Construct tables and graphs for inference of the results.
	Introduction to experimental Pharmacology (effects of drugs on rabbit's Eye)	340	Demonstrate measuring the pupil size.
		341	Demonstrate corneal reflex.
		342	Demonstrate light reflex.
	Effects of Parasympathomimetic drug (e.g.,	343	Demonstrate the effect of Pilocarpine on the size of the pupil in the test eye in comparison with the control eye.

	Pilocarpine) on rabbit's eye		
		344	Demonstrate the effect of Pilocarpine on the colour of the conjunctiva in the test eye in comparison with the control eye.
		345	Demonstrate the effect of Pilocarpine on the corneal reflex in the test eye in comparison with the control eye.
		346	Demonstrate the effect of Pilocarpine on the light reflex in the test eye in comparison with the control eye.
	Effects of Sympathomimetic drug (e.g., Ephedrine) on rabbit's eye	347	Demonstrate the effect of Ephedrine on the size of the pupil in the test eye in comparison with the control eye.
		348	Demonstrate the effect of Ephedrine on the colour of the conjunctiva in the test eye in comparison with the control eye.
		349	Demonstrate the effect of Ephedrine on the corneal reflex in the test eye in comparison with the control eye.
		350	Demonstrate the effect of Ephedrine on the light reflex in the test eye in comparison with the control eye.
	Effects of Parasympatholytic drug (e.g., Tropicamide) on rabbit's eye	351	Demonstrate the effect of Tropicamide on the size of the pupil in the test eye in comparison with the control eye.

		352	Demonstrate the effect of Tropicamide on the colour of the conjunctiva in the test eye in comparison with the control eye.
		353	Demonstrate the effect of Tropicamide on the corneal reflex in the test eye in comparison with the control eye.
		353	Demonstrate the effect of Tropicamide on the light reflex in the test eye in comparison with the control eye.
	Effects of Local anaesthetic (e.g., Proparacaine) on rabbit's eye	354	Describe the mechanism of action of Proparacaine regarding its effects on the eye.
		355	Demonstrate the effect of Proparacaine on the size of the pupil in the test eye in comparison with the control eye.
		356	Demonstrate the effect of Proparacaine on the colour of the conjunctiva in the test eye in comparison with the control eye.
		357	Demonstrate the effect of Proparacaine on the corneal reflex in the test eye in comparison with the control eye.
		358	Demonstrate the effect of Proparacaine on the light reflex in the test eye in comparison with the control eye.
	To identify an unknown drug on rabbit's eye	359	Demonstrate the effect of the unknown drug on the size of the pupil in the test eye in comparison with the control eye.

		360	Demonstrate the effect of the unknown drug on the colour of the conjunctiva in the test eye in comparison with the control eye.
		361	Demonstrate the effect of the unknown drug on the corneal reflex in the test eye in comparison with the control eye.
		362	Demonstrate the effect of the unknown drug on the light reflex in the test eye in comparison with the control eye.
		363	Interpret the results.
		364	Identify the unknown drug.
Forensic medicine	Autopsy report	365	Construct a full autopsy report including all components after thorough examination.
	Toxicology Sample collection	366	Explain the procedures, organ needed, and preservation used in sample collection.
	Toxicology Report Analysis	367	interpret the toxicology report received and then incorporate it in final opinion.
	Thanatology	368	Identify and describe various models of post-mortem changes
	Stomach wash	369	Perform stomach wash on a manikin