

Learning objectives

Endocrine and Reproduction-2 Module

Year-4 (MBBS)

Total Weeks: 08

Central Curriculum Committee, Khyber Medical University

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Themes

S. No	Theme	Topics / region covered	Duration in days
1	Tall/short stature	Pituitary gland	3
2	Neck swelling and Muscle cramps	Thyroid and parathyroid glands	6
3	Excessive thirst and urination	Endocrine pancreas	6
4	Moon face	Adrenal cortex	5
5	Infertility and pregnancy	Female sexual organs	15
6	Breast lump	Breasts	3

General learning outcomes

At the end of this module, the year 4 students will be able to:

- 1) Describe the pathology, clinical features, investigations and treatment of Hyper and hypopituitarism
- 2) Describe the pathology, clinical features, investigations and treatment of Hyper and hypothyroidism, and hyper and hypoparathyroidism
- 3) Describe the classification, pathogenesis, clinical features, investigations and treatment of Diabetes mellitus
- 4) Explain the pathology, clinical features, investigations and treatment of Hyper and hypoadrenalism
- 5) Explain the causes of male and female infertility and its management
- 6) Explain the classification, pathology and management of testicular tumors
- 7) Explain benign and malignant breast disease
- 8) Discuss the etiology, risk factors, clinical features, investigations and treatment of carcinoma of breast
- 9) Describe the pharmacokinetics and pharmacodynamics of pituitary, gonadal, pancreatic, thyroid and adrenocortical hormones, their synthetic analogues and antagonists, and their role in the management of relevant disease conditions
- 10) Formulate prescriptions for patients with Graves' disease and Diabetes mellitus
- 11) Discuss the laws related to sexual offenses, and management of a rape victim in forensic aspects
- 12) Explain the pathophysiology and surgical management of benign prostatic hyperplasia and carcinoma of the prostate

Specific Learning Objectives

Subject	Topic	Hours needed	S. No	Learning Objectives <i>At the end of this module, the students of year 4 MBBS will be able to:</i>
Theme-1: Tall / short stature				

Pathology	Pituitary gland- Physiological anatomy	1	1	Explain the gross and microscopic structure of pituitary gland
			2	Explain the functions of hormones of the anterior and posterior pituitary gland and their regulation by the Hypothalamus
	Hyperpituitarism/Pituitary adenomas: <ul style="list-style-type: none"> • Prolactinomas • Somatotrophic tumors • Corticotrophic tumors • others 	1	3	Explain the causes of hyperpituitarism
			4	Discuss the gross and microscopic structure of pituitary adenomas, and the hormones secreted from these
			5	Explain the clinical manifestations of different types of pituitary adenomas
	Hypopituitarism	1	6	Describe the etiology and clinical manifestations of hypopituitarism
Medicine	Acromegaly/Gigantism	2	7	Explain the etiology, clinical features, investigations,

				treatment and complications of Acromegaly/gigantism
	Hyperprolactinemia		8	Discuss the etiology, clinical features, investigations and treatment of hyperprolactinemia
	Hypopituitarism/Sheehan`s syndrome		9	Explain the etiology, clinical features, investigations and treatment of Hypopituitarism and Sheehan`s syndrome
Pharmacology	Growth hormone	1	10	Describe the sources of Growth hormone (old and new sources)
			11	Describe the mechanism of action, clinical uses and adverse effects of Growth hormone
	Growth hormone antagonists (Octreotide and others)		12	Enlist Growth hormone antagonists
			13	Describe the clinical role of Octreotide in acromegaly
			14	Describe the route of administration, dosage and adverse effects of octreotide in acromegaly and gigantism
	Bromocriptine	1	15	Describe the mechanism of action, clinical uses and

				adverse effects of Bromocriptine
Pediatrics	Short stature	1	16	Describe the method to measure and plot height; and calculate height velocity and midparental, target height to allow early diagnosis of growth disorders in pediatric patients
			17	Explain the diagnostic criteria that allow to differentiate causes of growth deficiency
			18	Discuss the tools for better communication with patients and families and coordination of multidisciplinary care
			19	Discuss treatment of growth hormone deficiency or other diseases responsible for short stature and their appropriate management
Neurosurgery	Surgical management of pituitary adenoma	1	20	Explain the surgical treatment and complications of pituitary macro/microadenomas
Community medicine	Occupational Health: Introduction	1	21	Define occupational health

			22	Discuss importance of occupational health
			23	Describe ergonomics
			24	Describe principles and responsibilities of occupational health officer [OHO]
	Physical hazards	1	25	Enumerate physical hazards (heat, cold, noise, light, vibrations, pressure effect, Radiations)
			26	Discuss its ill effects on health
			27	Discuss its preventive measures
	Chemical hazards	1	28	Enumerate chemical hazards (inorganic dust diseases, organic dust diseases, metals & chemicals)
			29	Discuss its ill effects on health
			30	Discuss preventive measures
	Mechanical, Biological & Psychosomatic hazards	1	31	Describe mechanical hazards
			32	Discuss control measures of mechanical hazards
			33	Discuss control measures of mechanical hazards

			34	Discuss control measures of biological hazards
			35	Describe psychosomatic stressors
			36	Discuss control measures of psychosomatic stressors
	Animal hazards	1	37	Describe types, prevalence and statistics of snake bite
			38	Discuss prevention and management of snake bite
			39	Discuss causes of poor management with respect to awareness and vaccination
	Preventive measures, health insurance, social security schemes	1	40	Describe various preventive measures of occupational hazards (Medical engineering and legal measure)
			41	Discuss role and benefits of health insurance
			42	Discuss social security and its benefits
	Demography: Introduction	3	43	Define demography and various related terms
			44	Explain and interpret population pyramid
			45	Explain demographic transition

			46	Describe the causes of high and low fertility and mortality
	Growth rate		47	Define population growth rate, CDR, CBR
			48	Describe growth rate
			49	Describe population explosion & its implications
			50	Explain advantages of population control
	Demographic indicators		51	Describe the demographic indicators of Pakistan
PRIME/MEDICAL EDUCATION	Dealing with patients	1	52	Serve the patient as an individual, taking into account lifestyle, beliefs and support system
	Community Need analysis		53	Identify the health care needs of community
	Gender based violence	1		Classify gender based violence
				Explain the reasons for gender based violence
				Discuss the outcomes of gender based violence
				Explain the preventive strategies for gender based violence
				Discuss the legal implications of gender based violence in Pakistani context

Theme-2: Neck swelling and muscle cramps				
Physiology	Physiologic anatomy of the Thyroid gland	1	54	Explain the gross and microscopic structure of Thyroid gland
			55	Explain the synthesis and functions of hormones of the thyroid gland and their regulation by the anterior pituitary
Pathology	Hyperthyroidism including Grave`s disease	1	56	Discuss the etiology, pathogenesis and morphology of Hyperthyroidism and Grave`s disease
	Hypothyroidism	1	57	Discuss the etiology, pathogenesis, morphology and clinical features of Hypothyroidism
	Thyroiditis	1	58	Discuss the classification, morphology and presentations of Thyroiditis
	Multinodular goitre		59	Explain the etiology, clinical features, and complications of multinodular goitre
	Thyroid malignancies	1	60	Classify thyroid malignant disorders
			61	Explain morphology, clinical features and prognosis of thyroid malignancies

Medicine	Hyperthyroidism including Grave`s disease	1	62	Discuss the etiology, clinical features, investigations and treatment and prognosis of Hyperthyroidism and Grave`s disease
			63	Explain the pathogenesis, clinical features and management of Grave`s Ophthalmopathy
	Hypothyroidism	2	64	Discuss the types, etiology, clinical features, investigations and treatment of Hypoparathyroidism
	Thyroiditis		65	Describe the classification, etiology, clinical features, investigations and treatment of Thyroiditis
	Multinodular goitre	1	66	Discuss the etiology, clinical features, investigations and management approach to a patient with multinodular goitre
	Thyroid malignancies		67	Classify thyroid malignant disorders
			68	Discuss the pathogenesis, clinical features, investigations and management of Thyroid malignancies

	Hyperparathyroidism	1	69	Discuss the types, etiology, clinical features, investigations and treatment of Hyperparathyroidism
	Hypoparathyroidism		70	Discuss the types, etiology, clinical features, investigations and treatment of Hypoparathyroidism
Pharmacology	Thyroid hormones	1	71	Enlist thyroid preparations (used clinically as well as older-obsolete ones)
			72	Describe the mechanism of action, pharmacological effects, clinical use and adverse effects of Thyroxine (T ₄) and Tri-iodothyronine (T ₃)
	Antithyroid drugs	2	73	Classify Antithyroid drugs
			74	Describe the mechanism of action, clinical use and adverse effects of Thioamides
			75	Describe the mechanism of action, clinical use and adverse effects of Potassium iodide
			76	Describe Lugol's iodine solution

			77	Describe the mechanism of action, clinical use and adverse effects of Radioactive iodine (^{131}I)
			78	Describe the use of β -blockers in hyperthyroid patients
Pediatrics	Congenital hypothyroidism	1	79	Discuss the types and clinical features of hypoparathyroidism
			80	Discuss investigations and treatment of Hypoparathyroidism
Community medicine	Iodine deficiency / Goitre	1	81	Discuss sources of iodine and goitrogens
			82	Discuss iodine deficiency disorders and daily requirement of iodine
			83	Explain the epidemiological determinants and control strategies for iodine deficiency/goitre
Theme-3: Excessive thirst and urination				
Pathology	Diabetes Mellitus	1	84	Classify Diabetes mellitus
	<ul style="list-style-type: none"> • Classification • Diagnosis • Insulin resistance • Beta cell dysfunction 		85	Explain the diagnostic criteria of DM
			86	Explain the mechanisms of insulin resistance
			87	Explain the mechanisms of beta cell dysfunction

	<ul style="list-style-type: none"> • Complications <ul style="list-style-type: none"> ○ Acute ○ Chronic 		88	Explain the acute and chronic complications of DM
	Pancreatic neuroendocrine tumors	1	89	Describe the types and clinical presentations of pancreatic neuroendocrine tumors
Medicine	Diabetes mellitus <ul style="list-style-type: none"> • Types • Insulin resistance syndromes • Clinical features investigations • Treatment • Complications 	2	90	Explain the different types of DM
			91	Discuss the mechanism presentation, and management of insulin resistance
			92	Discuss the clinical features of DM
			93	Explain the diagnostic workup of a patient with DM
			94	Classify the pharmacological treatment of DM
			95	Explain life style modifications in the management of DM

		1	96	Discuss the acute and chronic complications of DM
	Hypoglycemic coma	1	97	Explain the etiology, clinical features and management of hypoglycemic coma
	Diabetic ketoacidosis	1	98	Explain the precipitating factors, diagnostic work up, and treatment of a patient with diabetic ketoacidosis
	Hyperosmolar non-ketotic diabetic coma		99	Explain the precipitating factors, diagnostic work up, and treatment of a patient with Hyperosmolar non-ketotic diabetic coma
	Lactic acidosis		100	Explain the precipitating factors, diagnostic work up, and treatment of a patient with Lactic acidosis
	Posterior pituitary gland	1	101	Discuss the functions of hormone Vasopressin secreted by the posterior pituitary gland
			102	Explain the etiology, clinical features, investigations and treatment of Diabetes insipidus
	SIADH		103	Explain the etiology, and pathogenesis of SIADH secretion
Pharmacology	Insulin	1	104	Classify Insulins

			105	Describe the sources of Insulin
			106	Describe the differences between the human, bovine and porcine Insulins
			107	Describe the mechanism of action and clinical uses of Insulin
			108	Describe the complications of Insulin therapy
			109	Describe the management of hypoglycemia caused by Insulin
			110	Describe the management of diabetic ketoacidosis
	Oral hypoglycemic drugs	2	111	Classify oral hypoglycemic drugs
			112	Enlist euglycaemic drugs
			113	Describe the mechanism of action and adverse effects of Sulphonylureas
			114	Describe the mechanism of action and clinical use of Meglitinides
			115	Describe the mechanism of action, clinical use and adverse effects of Biguanides
			116	Describe the mechanism of action, clinical use and

				adverse effects of Thiazolidinediones
			117	Describe the mechanism of action, clinical use and adverse effects of α -glucosidase inhibitors
			118	Describe the mechanism of action and clinical use of Pramlintide, Exenatide and Sitagliptin
	Glucagon	1	119	Describe the mechanism of action and clinical use of Glucagon
	Vasopressin/Desmopressin		120	Describe the mechanism of action, clinical use and adverse effects of Desmopressin
			121	Enlist the drugs used in nephrogenic diabetes insipidus
Pediatrics	Management of Type 1 Diabetes mellitus in children	1	122	Enumerate the blood glucose parameters and the clinical signs for an early diagnosis of diabetes in a child.
			123	Recognize how diabetes may present in young children or babies, in order to make the diagnosis and prevent coma or death

			124	Plan investigations and management plan for a newly diagnosed and a known diabetic child.
			125	Enumerate the different types of insulins.
Community medicine	Non-communicable diseases: Prevention of diabetes mellitus	2	126	Discuss Prevalence of diabetes mellitus globally and in Pakistan
			127	Discuss modifiable and non-modifiable risk factors for diabetes mellitus
			128	Describe epidemiological determinants of diabetes mellitus
			129	Discuss screening methods for diabetes mellitus
			130	Discuss the prevention (Primary, secondary and tertiary) and care of diabetes mellitus
Theme-4: Moon face				
Physiology	Physiology of the Adrenal cortical hormones	1	131	Explain the gross and microscopic structure of Adrenal gland
			132	Explain the synthesis and functions of hormones of the adrenal cortex and their regulation by the anterior pituitary

Pathology	Hypercortisolism and Cushing's syndrome	1	133	Discuss the etiology of Hypercortisolism
			134	Explain the etiology and clinical features, of Cushing's syndrome
	Hyperaldosteronism	1	135	Explain the etiology, and presentation of primary Hyperaldosteronism
	Adrenogenital syndrome		136	Explain the etiology, clinical features, of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> • Primary (Acute and Chronic) • Secondary 	1	137	Classify adrenal insufficiency in the context of its etiology
			138	Discuss the clinical presentations and complications of adrenal insufficiency
	Adrenal neoplasms	1	139	Discuss the types of adrenal neoplasms
			140	Explain the morphology, and clinical features of adrenal neoplasms
	Pheochromocytoma	1	141	Explain the morphology, and clinical features of Pheochromocytoma
	Multiple Endocrine Neoplasia syndromes (MEN)		142	Classify Multiple endocrine neoplasia syndrome

			143	Explain the morphology and clinical features of MEN
Medicine	Hypercortisolism and Cushing`s syndrome	1	144	Explain the etiology, clinical features, diagnostic workup and management of Hypercortisolism/Cushing`s syndrome
	Primary Hyperaldosteronism	1	145	Explain the etiology, clinical features, diagnostic workup and management of Primary Hyperaldosteronism
	Adrenogenital syndrome	1	146	Explain the etiology, clinical features, diagnostic workup and management of Adrenogenital syndrome
	Adrenal insufficiency <ul style="list-style-type: none"> • Primary (Acute and Chronic) • Secondary 	1	147	Classify adrenal insufficiency
			148	Explain the etiology, clinical features, investigations and treatment of primary Addison`s disease
			149	Explain the etiology, clinical features, investigations and treatment of pituitary adrenal insufficiency

	Adrenal neoplasms	1	150	Explain the types of adrenal tumors
			151	Discuss the clinical presentations, diagnostic workup and treatment of adrenal tumors
	Pheochromocytoma	1	152	Explain the clinical features, investigations, management and complications of Pheochromocytoma
	Gastro-entero-pancreatico-neuroendocrine tumors (GEP-NETs) including Carcinoid tumors		153	Explain the clinical features, investigations, management of GEP-NETs/Carcinoid tumors
Pharmacology	Glucocorticoids	1	154	Classify Glucocorticoids
			155	Describe the mechanism of action, pharmacological effects, clinical uses and adverse effects of glucocorticoids
			156	Describe dexamethasone suppression test
	Glucocorticoid antagonists/synthesis inhibitors	1	157	Enlist Glucocorticoid antagonists/synthesis inhibitors
			158	Describe the mechanism of action, clinical uses and adverse effects of Mifepristone,

				Ketoconazole, Metyrapone and Aminoglutethimide
	Aldosterone antagonists		159	Describe the mechanism of action, clinical uses and adverse effects of Spironolactone (apart from being used as diuretic)
Community medicine	Introduction to nutrition, basic measurements & allowances	8	160	Classify nutrients
			161	Discuss quality of nutrients in diet
			162	Discuss the balanced diet
			163	Discuss energy value of different nutrients
	Macronutrients		164	Describe classification of macronutrients
			165	Discuss the functions and importance of various macronutrients
			166	Discuss daily allowance of macro nutrients
			167	Discuss the diseases caused by their deficiency and excess
	Micronutrients -Vitamin deficiencies allowances & control		168	Describe classification of micronutrients
			169	Discuss the function and importance of various vitamins

		170	Discuss daily allowances of vitamins
		171	Discuss diseases caused by their deficiency
	Micronutrients -mineral deficiencies allowances and control	172	Discuss the function and importance of various minerals essential for health
		173	Discuss daily allowance of minerals intake
		174	Discuss diseases caused by their deficiency
	Undernutrition – Protein calorie malnutrition and control	175	Define undernutrition and its classification
		176	Discuss protein calorie malnutrition & its causes
		177	Describe the various classifications for assessment of PEM
		178	Discuss control strategies of malnutrition
	Over-nutrition / obesity and it's control	179	Define obesity
		180	Calculate BMI
		181	Discuss Epidemiology of obesity.
		182	enumerate Causes of obesity.
		183	Explain the Complications of obesity

			184	Formulate a Management plan for obesity
			185	Discuss Prevention of obesity
Theme-5: Infertility and pregnancy				
Pathology	Testicular tumors	1	186	Classify testicular tumors
			187	Explain the gross and microscopic morphology of benign and malignant testicular tumors
			188	Discuss the staging and prognosis of testicular malignant tumors
	Prostatic disorders <ul style="list-style-type: none"> • Prostatitis • Benign prostatic hyperplasia (BPH) • Prostatic carcinoma 	2	189	Explain the etiology and morphology of Prostatitis
			190	Explain the gross and microscopic morphology and complications of BPH
			191	Explain the clinical features, types and staging of prostatic carcinoma
	Sexually transmitted diseases (STDs) <ul style="list-style-type: none"> • Syphilis • Gonorrhoea 	1	192	Explain the types of STDs
			193	Explain the stages, morphology, clinical

				features and complications of Syphilis
			194	Name the organisms causing Gonorrhoea and its clinical features
	Introduction to gynecological cancers	1	195	Enlist different types of gynecological cancers
	Cervical carcinoma		196	Explain the gross and microscopic morphology, clinical features and staging of Cervical carcinoma
	Endometritis	1	197	Explain the etiology and pathogenesis of endometritis
	Uterine fibroids		198	Explain the etiology and morphology of uterine fibroids
	Endometriosis		199	Explain the etiology, pathogenesis and morphology of endometriosis
	Endometrial hyperplasia and endometrial carcinoma	1	200	Explain the etiology, pathogenesis, morphology of Endometrial hyperplasia /carcinoma
	Polycystic ovarian disease	1	201	Explain the etiology, risk factors, clinical features and morphology of Polycystic ovary syndrome

	Tumors of the ovary <ul style="list-style-type: none"> • Benign • malignant 	1	202	Classify benign and malignant tumors of the ovary
			203	Explain the gross and microscopic morphology, clinical features, staging and complications of ovarian carcinoma
Gynaecology	Anatomy of the reproductive tract	1	204	Describe the anatomy of the perineum, the vagina, cervix and uterus, the adnexa and ovary
	Menopause	1	205	Define Menopause.
			206	Describe physiological and non-physiological menopause
			207	Explain the clinical effects of menopause on women
			208	Outline the assessment of menopausal women, based on modifiable and non-modifiable risk factors.
			209	Explain the management of menopause
			210	Describe the types, side-effects, relative and absolute contraindications of hormone replacement therapy (HRT)
	Contraception	1	211	Define contraception

			212	Classify contraceptive methods
			213	Explain their mechanisms of action, efficacy and failure rates
			214	Explain the risks and benefits of each method
			215	Identify the complications of different contraceptive methods
	Polycystic ovary syndrome	1	216	Explain the risk factors, etiology, clinical features, investigations, treatment, complications and prognosis of polycystic ovary syndrome
	Uterine fibroids		217	Explain the risk factors, clinical features, and management of uterine fibroids
	Endometrial cancers	1	218	Explain the risk factors, clinical features, investigations, prognosis and management of endometrial carcinoma
	Cervical carcinomas		219	Explain the risk factors, clinical features, investigations, prognosis and management of cervical carcinoma
	Female infertility	1	220	Define infertility

			221	Discuss the causes and management of female infertility
	Malignant diseases of the ovaries	1	222	Classify benign and malignant diseases of the ovaries
			223	Explain the clinical features, diagnosis, serological markers, staging, management and complications of ovarian carcinoma
	Uterovaginal prolapse	1	224	Describe the etiology, clinical features, complications and management of Uterovaginal prolapse
	Urinary incontinence	1	225	Classify urinary incontinence
			226	Explain the etiology, clinical features, management and prevention of urinary incontinence
	Endometriosis	1	227	Define endometriosis
			228	Explain the etiology, clinical features, investigations and management of Endometriosis
	Abnormal uterine bleeding	1	229	Explain the etiology of abnormal uterine bleeding

			230	Describe the diagnostic approach to a patient with abnormal uterine bleeding
	Miscarriage	1	231	Define miscarriage
			232	Explain the etiology, risk factors, management and prevention of miscarriage
	Ectopic gestation		233	Describe the etiology, clinical features, diagnosis and management of ectopic gestation
	Gestational trophoblastic diseases (GTDs)	1	234	Classify GTDs
			235	Explain the etiology, clinical features, diagnosis, management and complications of H. Mole
			236	Explain the etiology, clinical features, diagnosis, management and complications of Choriocarcinoma
	Vaginal discharge and STDs	1	237	Explain the etiology and diagnostic workup of vaginal discharge
			238	Describe the risk factors, etiology, clinical features, management, complications and prevention of STDs

Pharmacology	Gonadotropins (FSH & LH) and human chorionic gonadotropin	1	239	Describe the mechanism of action, clinical uses and adverse effects of Gonadotropins (FSH & LH) and human chorionic gonadotropin (hCG)
			240	Describe the role of gonadotropins in male infertility
	Gonadotropin-releasing hormone and analogues (Gonadorelin and others)		241	Describe the mechanism of action, clinical uses and adverse effects of Gonadotropin-releasing hormone and analogues (Gonadorelin and others)
	Oxytocin	1	242	Describe the mechanism of action, clinical uses and adverse effects of Oxytocin
	Oestrogens	1	243	Classify Oestrogens
			244	Describe the mechanism of action, organ system effects, clinical uses, adverse effects and contraindications of Oestrogens
			245	Describe Premarin
	Progestins	1	246	Classify Progestins
			247	Describe the mechanism of action, organ system effects, clinical uses, adverse effects and

				contraindications of Progestins
	Oral contraceptives	2	248	Classify Oral contraceptives
			249	Describe the mechanism of action, organ system effects, clinical uses, adverse effects and contraindications of oral contraceptive pills
			250	Describe mini pills with their advantages and disadvantages
			251	Describe post-coital contraceptives
	Parenteral and implantable contraceptives		252	Describe the use of Parenteral (Medroxyprogesterone) and implantable (Norplant system) contraceptives
	Ovulation-inducing agent (Clomiphene)	1	253	Describe the mechanism of action, clinical use and adverse effects of Clomiphene
	Mifepristone		254	Describe the mechanism of action, clinical uses and adverse effects of Mifepristone
	Danazol		255	Describe the mechanism of action, clinical uses and adverse effects of Danazol

	Androgens and anabolic steroids	1	256	Enlist Androgens and anabolic steroids
			257	Describe the mechanism of action, clinical uses and adverse effects of androgen preparations
	Antiandrogens		258	Classify antiandrogens
			259	Describe the role of Ketoconazole as steroid synthesis inhibitor, its clinical uses and adverse effects
			260	Describe the mechanism of action and clinical use of Finasteride
			261	Describe the mechanism of action and clinical use of Cyproterone acetate
			262	Describe the role of Spironolactone as androgen receptor blocker and its use in this context
	Male contraception		263	Enlist the drugs used for male contraception
		264	Describe the role of Gossypol as male contraceptive agent	
Forensic medicine	Impotence and sterility	1	265	Define impotence
			266	Define sterility

			267	Examine under supervision a case of sterility and impotence
			268	Describe important causes leading to sterility and impotence in males as well as in females
			269	Appreciate difference between sterility and impotence
			270	Medicolegal importance of sterility and impotence
	Sterilization	1	271	Define sterilization
			272	Medicolegal importance of sterilization
			273	Discuss the technique of sterilization in males and females
			274	enumerate legal formalities before sterilization
	Artificial insemination	1	275	Define artificial insemination
			276	Enumerate its different types
			277	Describe medicolegal aspects of artificial insemination
			278	Define test tube baby
			279	Define surrogate motherhood and

				enumerate its medicolegal importance
	Virginity	1	280	Define virginity
			281	Discuss signs of virginity
			282	Enumerate different types of hymen
	Pregnancy	1	283	Define pregnancy
			284	Describe presumptive signs of pregnancy
			285	Discuss probable signs of pregnancy
			286	Appreciate conclusive signs of pregnancy
			287	Enumerate signs of pregnancy in dead
			288	Discuss Medicolegal aspects of pregnancy
			289	Describe Isqat e Haml & Isqat E Janin as per PPC
	Delivery	1	290	Define delivery
			291	Appreciate signs of recent delivery in living
			292	Appreciate or identify signs of recent delivery in dead
			293	Identify signs of remote delivery in living and dead
			294	Enumerate medicolegal aspects of delivery
	Legitimacy & dissolution of marriage	1	295	Define legitimacy
			296	Define illegitimate child

			297	Enumerate medicolegal aspects of legitimacy
			298	Define superfetation
			299	Enumerate medicolegal aspects of affiliation/adoption
			300	Enlist legal grounds for nullity and dissolution of marriage
	Natural sexual offences: Rape & Incest	1	301	Define rape as per CrPC
			302	Enumerate medicolegal aspects of rape
			303	Examine under supervision a case of rape victim
			304	Examine under supervision examination of the accused
			305	Define incest
	Zina	1	306	Define Muhsan as per Hudood ordinance 1979.
			307	Define Zina according Huddod ordinance 1979.
			308	Enumerate the conditions required for liability in case of Zina.
			309	Enlist punishment of Zina
			310	Enumerate steps of proof of Zina in the court
			311	Describe steps of complaint in case of Zina as per Cr PC
	Unnatural sexual offences Sodomy	1	312	Define sodomy

			313	Enumerate steps of examination of passive agent in sodomy
			314	Enumerate steps of examination of active agent
			315	Define and describe buccal coitus
			316	Define and describe tribadism
			317	Define bestiality
	Sexual perversions	1	318	Define sexual perversions
			319	Enumerate its different types
			320	Define and describe sadism
			321	Define and describe masochism
			322	Define and describe fetishism
			323	Define and describe exhibitionism
			324	Define and describe transvestism
			325	Define and describe uranism
			326	Define and describe voyeurism
			327	Define and describe frotteurism
			328	Define and describe urolagnia
	Abortion	1	329	Define abortion

			330	enumerate its different types
			331	enumerate salient features of natural abortion
			332	enumerate salient features of artificial abortion
			333	differentiate between natural and criminal abortion
			334	examine under supervision a case of criminal abortion and legal formalities to be fulfilled in such a case
Urology/Surgery	Causes of male infertility	1	335	Discuss the causes of male infertility
			336	Explain the diagnostic workup of a male infertile patient
Surgery	Cryptorchidism	1	337	Define Cryptorchidism
			338	Explain the etiology, complications and management of Cryptorchidism
	Hydrocele and varicocele		339	Explain the cause, clinical features, complications and surgical management of hydrocele and varicocele
	Benign prostatic hyperplasia	1	340	Explain the etiology, clinical features, complications and management of BPH

	Carcinoma of prostate		341	Explain the etiology, clinical features, complications, staging, management and prognosis of carcinoma of the prostate
Community medicine	Safe motherhood	1	342	Define reproductive health
			343	Describe components of reproductive health
			344	Define safe motherhood
			345	Discuss pillars of safe motherhood
	Antenatal care	1	346	Discuss antenatal care
			347	Discuss antenatal visits as per WHO
	Family planning and post abortion care	1	348	Define family planning
			349	Discuss different methods of family planning
			350	Discuss contraceptive prevalence rate and factors responsible for low CPR
			351	Discuss Post abortion care
	Child promotion and development strategies (IMNCI, IMCI and growth monitoring)	2	352	Define IMNCI & IMCI
			353	Describe components of IMNCI
			354	Enumerate principles of IMNCI

			355	Discuss growth monitoring
	Prevention of reproductive health diseases	1	356	Discuss different reproductive health diseases
			357	Discuss STIs in detail
			358	Discuss risk factors and Prevention of CA cervix
Family medicine	Menstrual disorders	1	359	Enlist menstrual disorders
			360	Explain the etiology, investigations and management of menstrual disorders in primary care
	Menopause		361	Explain the clinical features, and management of menopausal symptoms and complications in primary care
	Contraception	1	362	Explain the types of contraception methods
			363	Explain the merits and demerits of different contraceptive techniques
			364	Describe the complications associated with the use of oral and injectable contraceptives
	Vaginal discharge and STDs	1	365	Explain the etiology of vaginal discharge
			366	Describe the diagnosis and management of vaginal discharge in primary care

			367	Classify Sexually transmitted infections in females
			368	Describe the clinical features, investigations and management of STDs in females in primary care
Theme-6: Breast lump				
Pathology	Fibrocystic changes <ul style="list-style-type: none"> • Cysts and fibrosis • Epithelial hyperplasia • Adenosis 	1	369	Explain the fibrocystic changes in breast including cysts, fibrosis, epithelial hyperplasia and adenosis
	Fibro-adenoma		370	Explain the morphology of Fibro-adenoma of the breast
	Papilloma		371	Explain the morphology of papilloma of the breast
	Carcinoma of the breast	1	372	Explain the risk factors, etiopathogenesis, clinical features, staging, and complications of carcinoma of the breast
	Gynecomastia		373	Discuss the causes and morphology of Gynecomastia
Surgery	Investigations of breast diseases	1	374	justify the investigations of a patient with a breast lesion
	Benign breast diseases		375	Classify benign breast diseases

	Malignant breast diseases	2	376	Classify malignant breast diseases
			377	Discuss the risk factors, etiology, clinical features, investigations, management and prognosis of a patient with breast cancer
			378	Describe the role of hormone receptors in breast cancer
			379	Explain the complications of breast cancer surgery
			380	Discuss the role of pharmacological treatment options in breast cancer management
			381	Explain the role of selective estrogen receptors modulators in the prevention of breast cancer in high risk women
Pharmacology	Selective Estrogen Receptor Modulators (SERMs)- Tamoxifen and others	1	382	Enlist Selective Estrogen Receptor Modulators (SERMs)
			383	Describe the mechanism of action and clinical uses of Tamoxifen
Community medicine	Breast feeding	1	384	Discuss advantages of breast feeding

			385	Discuss artificial feeding
			386	Discuss baby friendly hospital initiative
			387	Discuss guidelines on infant and child feeding
	Screening and prevention of breast cancer		388	Discuss different methods of screening for breast cancer
			389	Discuss levels of prevention of breast cancer
Radiology	Radiological approaches to breast cancer screening	1	390	Explain the indications, procedure, and interpretation of ultrasound and mammography in the investigation of breast lumps
PRIME/MEDICAL EDUCATION	Counselling- Breaking bad news	1	391	Explain the concept of SPICES model of breaking bad news
Practical work				
Pharmacology	Graves' disease	1.5	392	Formulate prescription for a patient with Graves' disease
	Diabetes mellitus	1.5	393	Formulate prescription for a patient with type 1 and type 2 Diabetes mellitus
Pathology	Glucose estimation	1.5	394	Check glucose in urine
			395	Check blood glucose in a given sample

	Goitre	1.5	396	Identify the microscopic features of multinodular goitre
	Pap smear	1.5	397	Interpret a pap smear slide
	Fibroids	1.5	398	Identify the microscopic features of uterine fibroids
	Carcinoma breast	1.5	399	Identify the microscopic features of carcinoma of the breast
Forensic medicine	Examination of a rape victim and assailant	2	400	Take consent from a rape victim
			401	Examine a rape victim/manikin
			402	Describe the procedure of taking sample from the victim/manikin/item
			403	Describe the procedure of Sealing and preservation of the specimen
	Examination of sodomy victim and assailant	2	404	Describe the procedure of Examining a victim of sodomy
			405	Describe the procedure of Taking sample from the victim/manikin/item
			406	Describe the procedure of Sealing and preservation of the specimen
Community medicine	Contraception	1.5	407	Identify the contraceptive device/drug

			408	Explain the merits and demerits
			409	Discuss the method of administration of the given device/drug
	Mother and child health	1.5	410	Identify the chart
			411	Devise a schedule plan for antenatal visits as per WHO criteria
	EPI schedule	1.5	412	Counsel the mother for EPI schedule
	Vaccination and immunization	1.5	413	Identify the vaccine
			414	Explain its uses
			415	Discuss its schedule of administration
			416	Discuss the results of VVM (vaccine vial monitor) and its uses in epidemics
	IMCI- anthropometric measures / Shakir`s tape	1.5	417	Identify the model
			418	Measure the mid-arm circumference
			419	Calculate the weight and height of the child
			420	Interpret the results
	Growth chart	1.5	421	Identify the chart
			422	Plot the graph using a scenario
			423	Interpret different parts of the chart

	Demographic indicators	1.5	424	Interpret the given demographic indicator (population pyramid, HDI, PQLI, Growth rate and dependency ratio)
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Total hours of different subjects

S. No	Subject	Hours allocated
1	Pathology	44
2	Pharmacology	23
3	Forensic medicine	16
4	Medicine	19
5	Community medicine	30
6	Gynaecology	14
7	Surgery	05
8	Pediatrics	02
9	Physiology	02
10	Urology	01
11	Neurosurgery	01
12	Family medicine	03
13	PRIME/MEDICAL EDUCATION	2
14	Research*	14**
	Total	162

* two hours per week for research project in the whole academic session

**these hours are neither included in total hours nor in assessment as separate marks have been allotted to research in viva