PHYSIOLOGY (CODE: PY)

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
				PHYSI	OLOGY				
Topic: G	eneral Physiology Numl	ber of con	npetenc	ies: (09)	Numb	er of procedures that r	equire certifi	cation : (NIL)	
PY1.1	Describe the structure and functions of a mammalian cell	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.2	Describe and discuss the principles of homeostasis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.3	Describe intercellular communication	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.4	Describe apoptosis – programmed cell death	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY1.5	Describe and discuss transport mechanisms across cell membranes	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.6	Describe the fluid compartments of the body, its ionic composition & measurements	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY1.7	Describe the concept of pH & Buffer systems in the body	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY1.8	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.9	Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research.	К	КН	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: H	aematology Number	r of comp	etencies	s: (13)	Number of pro	cedures that require c	ertification: (	NIL)	1

Number	COMPETENCY The student should be able to:	Domain K/S/A/C		Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY2.1	Describe the composition and functions of blood components	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.2	Discuss the origin, forms, variations and functions of plasma proteins	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY2.3	Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY2.4	Describe RBC formation (erythropoiesis & its regulation) and its functions	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY2.5	Describe different types of anaemias & Jaundice	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		Pathology	Biochemistry
PY2.6	Describe WBC formation (granulopoiesis) and its regulation	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY2.7	Describe the formation of platelets, functions and variations.	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY2.8	Describe the physiological basis of hemostasis and, anticoagulants.  Describe bleeding & clotting disorders (Hemophilia, purpura)	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	К	KH	Υ	Lecture, Small group discussion, ECE- Visit to blood bank	Written/Viva voce		Pathology	
PY2.10	Define and classify different types of immunity. Describe the development of immunity and its regulation	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY2.11	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce		Pathology	
PY2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc	К	KH	Y	Demonstration	Written /Viva voce		Pathology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration sessions	Written /Viva voce		Pathology	
Topic: N	erve and Muscle Physiology Numb	er of con	npetenci	es: (18)	Number o	of procedures that requ	ire certificati	ion: (NIL)	1
PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.2	Describe the types, functions & properties of nerve fibers	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.3	Describe the degeneration and regeneration in peripheral nerves	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY3.4	Describe the structure of neuro-muscular junction and transmission of impulses	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		Anaesthesiology	
PY3.5	Discuss the action of neuro-muscular blocking agents	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		Anaesthesiology, Pharmacology	
PY3.6	Describe the pathophysiology of Myasthenia gravis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY3.7	Describe the different types of muscle fibres and their structure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.8	Describe action potential and its properties in different muscle types (skeletal & smooth)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.9	Describe the molecular basis of muscle contraction in skeletal and in smooth muscles	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.10	Describe the mode of muscle contraction (isometric and isotonic)	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.11	Explain energy source and muscle metabolism	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY3.12	Explain the gradation of muscular activity	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce	Р	General Medicine	
PY3.13	Describe muscular dystrophy: myopathies	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY3.14	Perform Ergography	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce			
PY3.15	Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce			
PY3.16	Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment	S	SH	Υ	DOAP sessions	Practical/OSPE/Viva voce			
PY3.17	Describe Strength-duration curve	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.18	Observe with Computer assisted learning (i) amphibian nerve - muscle experiments (ii) amphibian cardiac experiments	S	KH	Y	Demonstration, Computer assisted learning methods	Practical / Viva voce			
Topic: G	astro-intestinal Physiology Nur	nber of co	ompeten	cies: (1	) Nu	  mber of procedures th	at require ce	ertification: (NIL)	
PY4.1	Describe the structure and functions of digestive system	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY4.2	Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.3	Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY4.4	Describe the physiology of digestion and absorption of nutrients	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C		Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY4.5	Describe the source of GIT hormones, their regulation and functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY4.6	Describe the Gut-Brain Axis	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY4.7	Describe & discuss the structure and functions of liver and gall bladder	К	КН	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.8	Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests	К	КН	Y	Lecture, Small group discussion, Demonstration Esophageal Manometry & endoscopy	Written/Viva voce			Biochemistry
PY4.9	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Biochemistry
PY4.10	Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment	S	SH	Y	DOAP session	Skill assessment/ Viva voce/OSCE			
Topic: C	ardiovascular Physiology (CVS) Num	ber of co	mpetenc	ies: (16	) Number of p	ocedures that require	certification:	(03)	
PY5.1	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY5.2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.3	Discuss the events occurring during the cardiac cycle	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.4	Describe generation, conduction of cardiac impulse	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.5	Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		General Medicine	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C			Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY5.6	Describe abnormal ECG, arrythmias, heart block and myocardial Infarction	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY5.7	Describe and discuss haemodynamics of circulatory system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.8	Describe and discuss local and systemic cardiovascular regulatory mechanisms	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY5.9	Describe the factors affecting heart rate, regulation of cardiac output & blood pressure	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY5.10	Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY5.11	Describe the patho-physiology of shock, syncope and heart failure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce	1 each x 3		
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment	S	SH	Υ	DOAP sessions	Practical/OSPE/ Viva voce		General Medicine	
PY5.14	Observe cardiovascular autonomic function tests in a volunteer or simulated environment	S	SH	N	DOAP sessions	Skill assessment/ Viva voce			
PY5.15	Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce			
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment	S	SH	N	DOAP sessions, Computer assisted learning methods	Practical/OSPE/ Viva voce		General Medicine	

Topic: Respiratory Physiology

Number of competencies: (10)

Number of procedures that require certification: (01)

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY6.1	Describe the functional anatomy of respiratory tract	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.2	Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs		КН	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.3	Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.4	Describe and discuss the physiology of high altitude and deep sea diving	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY6.5	Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.6	Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.7	Describe and discuss lung function tests & their clinical significance	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY6.8	Demonstrate the correct technique to perform & interpret Spirometry	S	SH	Υ	DOAP sessions	Skill assessment/ Viva voce		Respiratory Medicine	
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	S	Р	Y	DOAP sessions	Skill assessment/ Viva voce/OSCE	1		
PY6.10	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce			
Topic: R	enal Physiology Numbe	r of comp	etencies	s: (09)	Number o	f procedures that requi	re certification	on: (NIL)	
PY7.1	Describe structure and function of kidney	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.2	Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY7.3	Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY7.4	Describe & discuss the significance & implication of Renal clearance	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.5	Describe the renal regulation of fluid and electrolytes & acid-base balance	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY7.7	Describe artificial kidney, dialysis and renal transplantation	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY7.8	Describe & discuss Renal Function Tests	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY7.9	Describe cystometry and discuss the normal cystometrogram	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: E	ndocrine Physiology Number	er of comp	oetencies	s: (06)	Number	of procedures that re	quire certifica	ation : (NIL)	
PY8.1	Describe the physiology of bone and calcium metabolism	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.2	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.3	Describe the physiology of Thymus & Pineal Gland	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.4	Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY8.5	Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome.	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY8.6	Describe & differentiate the mechanism of action of steroid, protein and amine hormones	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: R	eproductive Physiology Number of co	mpetencie	es: (12)		Number of proce	dures that require cert	ification: (NIL	-)	
PY9.1	Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY9.2	Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.		KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY9.3	Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.4	Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.5	Describe and discuss the physiological effects of sex hormones	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY9.6	Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology, Community Medicine	
PY9.7	Describe and discuss the effects of removal of gonads on physiological functions	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY9.8	Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
	Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the results	К	КН	Y	Lecture, Small group discussion	OSPE/Viva voce			
PY9.10	Discuss the physiological basis of various pregnancy tests	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
PY9.11	Discuss the hormonal changes and their effects during perimenopause and menopause	К	KH	Υ	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
	Discuss the common causes of infertility in a couple and role of IVF	K	KH	Υ	Lecture, Small group	Written/Viva voce		Obstetrics &	
PY9.12	in managing a case of infertility.				discussion			Gynaecology	
						f procedures that requi	re certificatio		
Γopic: N	in managing a case of infertility.			Y		f procedures that requi	re certificatio		Human Anatomy
<b>Fopic: N</b>	in managing a case of infertility.  europhysiology  Number of comp	petencies:	(20)	Y	Number of Lecture, Small group	-	re certificatio		Human Anatomy Human Anatomy
<b>Γορίς: Ν</b> PY10.1 PY10.2	europhysiology  Number of comp  Describe and discuss the organization of nervous system  Describe and discuss the functions and properties of synapse,	petencies:	<b>(20)</b> KH	•	Number of Lecture, Small group discussion Lecture, Small group	Written/Viva voce	re certificatio		·
PY10.1 PY10.2 PY10.3	Describe and discuss the functions and properties of synapse, reflex, receptors  Number of comp	petencies:	(20) KH KH	Y	Number of Lecture, Small group discussion Lecture, Small group discussion Lecture, Small group	Written/Viva voce Written/Viva voce	re certificatio		Human Anatomy
PY10.1 PY10.2 PY10.3 PY10.4	Describe and discuss the functions and properties of synapse, reflex, receptors  Describe and discuss somatic sensations & sensory tracts  Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium &	etencies:	(20) KH KH	Y	Number of Lecture, Small group discussion Lecture, Small group discussion Lecture, Small group discussion Lecture, Small group	Written/Viva voce Written/Viva voce Written/Viva voce	re certificatio		Human Anatomy Human Anatomy

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	Human Anatomy
PY10.8	Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	
PY10.9	Describe and discuss the physiological basis of memory, learning and speech	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	
PY10.10	Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	S	Р	Y	DOAP sessions	Skill assessment/ Viva voce/OSCE	1 each (total 5)		Human Anatomy
PY10.12	Identify normal EEG forms	S	S	Y	Small group teaching	OSPE/Viva voce		Psychiatry	
PY10.13	Describe and discuss perception of smell and taste sensation	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.14	Describe and discuss patho-physiology of altered smell and taste sensation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests	К	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.17	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY10.18	Describe and discuss the physiological basis of lesion in visual pathway	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	
PY10.19	Describe and discuss auditory & visual evoke potentials	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	
PY10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment	S	Р	Y	DOAP sessions	Skill assessment/ Viva voce	1 each (total 4)	ENT, Ophthalmology	
Topic: In	tegrated Physiology Number of cor	npetencie	s: (14)		Number of pro	cedures that require c	ertification: (	NIL)	
PY11.1	Describe and discuss mechanism of temperature regulation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.2	Describe and discuss adaptation to altered temperature (heat and cold)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.3	Describe and discuss mechanism of fever, cold injuries and heat stroke	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.4	Describe and discuss cardio-respiratory and metabolic adjustments during exercise; physical training effects	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY11.5	Describe and discuss physiological consequences of sedentary lifestyle	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY11.6	Describe physiology of Infancy	K	KH	N	Lecture, Small group discussion	Written/Viva voce		Pediatrics	
PY11.7	Describe and discuss physiology of aging; free radicals and antioxidants	K	KH	N	Lecture, Small group discussion	Written/Viva voce			
PY11.8	Discuss & compare cardio-respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold)	К	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C		Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
PY11.9	Interpret growth charts	K	KH	N	Small group teaching	Practical/OSPE/ Viva voce		Pediatrics	
PY11.10	Interpret anthropometric assessment of infants	K	KH	N	Small group teaching	Practical/OSPE/ Viva voce		Pediatrics	
PY11.11	Discuss the concept, criteria for diagnosis of Brain death and its implications	K	KH	Υ	Lecture, Small group discussion	Written/Viva voce			
PY11.12	Discuss the physiological effects of meditation	К	KH	N	Lecture, Small group discussion	Written/Viva voce			
PY11.13	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	Y	DOAP sessions	Skill assessment/ Viva voce			
PY11.14	Demonstrate Basic Life Support in a simulated environment	S	SH	Y	DOAP sessions	OSCE		General Medicine, Anaesthesiology	

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.

Column D: K - Knows, KH - Knows How, SH - Shows how, P- performs independently,

Column F: DOAP session – Demonstrate, Observe, Assess, Perform.

Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

## Integration

Human Anatomy												
AN3.1	Classify muscle tissue according to structure & action	К	KH	Υ	Lecture	Written/ Viva voce		Physiology				
AN5.1	Differentiate between blood vascular and lymphatic system	K	KH	Y	Lecture	Written/ Viva voce		Physiology				
AN5.2	Differentiate between pulmonary and systemic circulation	K	KH	Υ	Lecture	Written/ Viva voce		Physiology				
AN5.6	Describe the concept of anastomoses and collateral circulation with significance of end-arteries	K	KH	Y	Lecture	Written/ Viva voce	General Medicine	Physiology				
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arteriovenous anastomoses	K	KH	N	Lecture	Written		Physiology				
AN5.8	Define thrombosis, infarction & aneurysm	K	KH	N	Lecture	Written	Pathology	Physiology				