CURRICULUM OF HUMAN PHYSIOLOGY FOR MEDIC #4.08.2021
STUDENTS

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# PHYSIOLOGY

# 1. VISION / GOAL

The broad goal of the teaching of undergraduate students in Physiology aims at providing the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease. Simultaneously focus is to inculcate requisite skills, attitudes, values and responsiveness, so that they may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

# 2. LEARNING OBJECTIVE (overall)

Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective so that he becomes capable of fulfilling his various roles of an Indian Medical Graduate as a clinician, leader, communicator, lifelong learner and professional,

# 3. COMPETENCIES

# (a) Knowledge /Cognitive Domain

At the end of the course the learner shall be able to:

- 1) Understand and explain the physiological functioning of all the organ systems and their interactions for well coordinated total body function.
- 2) Assess the relative contribution of each organ system to the maintenance of the milieu interior.
- 3) Explain various regulatory mechanisms and their integration.
- 4) Elucidate the physiological aspects of growth and development.
- 5) Describe the physiological response and adaptations to environment stresses and during disease processes.
- 6) List the physiological principles underlying, pathogenesis and treatment of disease.
- 7) Understand reproductive physiology and differences in sexual development.
- 8) Describe the various function tests for assessing the functioning of various organ systems.

Course content: see Appendix I

(https://www.nmc.org.in/information-desk/for-colleges/ug-curriculum)

# (b) Skills/ Psychomotor Domain

At the end of the course the learner shall be able to perform and interpret following skills:

- 1) Conduct experiments designed for study of physiological phenomena
- 2) Interpret experimental / investigative data to assess health status.
- 3) Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

4) Understand basic laboratory investigations relevant for a rural set up

5) Able to perform a physical examination and perform diagnostic maneuvers

(List of Experiments/Investigation: Appendix I)

# (c) Communication Domain

- 1) Communicate effectively with peers, students and teachers in various teaching-learning activities.
- 2) Demonstrate the use of verbal and non-verbal empathetic communication techniques while communicating with patients and/or caregivers.

# (d) Attitude Domain

- 1) Demonstrate respect for inherent dignity and autonomy of patients and their caregivers
- 2) Due respect in handling human body parts and gender issues that could arise during clinical examination
- 3) Appreciate the issues of equity and social accountability while exposing students to early clinical exposure
- 4) Demonstrate respect for diversity and professional behavior
- 5) Demonstrate ability to recognize and manage ethical and professional conflicts.

# 4. COURSE

Course content: see Appendix 1

# General Physiology

- PY1.1 Describe the structure and functions of a mammalian cell
- PY1.2 Describe and discuss the principles of homeostasis
- PY1.3 Describe intercellular communication
- PY1.4 Describe apoptosis programmed cell death
- PY1.5 Describe and discuss transport mechanisms across cell membranes
- PY1.6 Describe the fluid compartments of the body, its ionic composition & measurements
- PY1.7 Describe the concept of pH & Buffer systems in the body
- PY1.8 Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue
- 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.

#### **Haematology**

- PY 2.1Describe the composition and functions of blood components
- PY2.2 Discuss the origin, forms, variations and functions of plasma proteins
- PY2.3 Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin
- PY2.4 Describe RBC formation (erythropolesis & its regulation) and its functions



PY2.7 Describe the formation of platelets, functions and variations. - 24.08.2021

PY2.8 Describe the physiological basis of hemostasis and, anticoagualts - 26
Describe bleeding & clotting disorders (Hemophilia, purpling 478 of 527

PY2.9 Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion

PY2.10 Define and classify different types of immunity. Describe the development of immunity and its regulation

PY2.11 Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT PY2.12 Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc

PY 2.13 Describe steps for reticulocyte and platelet count

Nerve and Muscle Physiology

PY3.1 Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines

PY3.2 Describe the types, functions & properties of nerve fibers

PY3.3 Describe the degeneration and regeneration in peripheral

PY3.4 Describe the structure of neuro-muscular junction and transmission of impulses

PY3.5 Discuss the action of neuro-muscular blocking agents

PY3.6 Describe the pathophysiology of Myasthenia gravis

PY3.7 Describe the different types of muscle fibres and their structure

PY3.8 Describe action potential and its properties in different muscle types (skeletal & smooth)

PY3.9 Describe the molecular basis of muscle contraction in skeletal and in smooth muscles

PY3.10 Describe the mode of muscle contraction (isometric and isotonic)

PY3.11 Explain energy source and muscle metabolism

PY3.12 Explain the gradation of muscular activity

PY3.13 Describe muscular dystrophy

PY3.14 Perform Ergography

PY3.15 Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters

PY3.16 Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment

PY3.17 Describe Strength-duration curve

PY3.18 Observe with Computer assisted learning (i) amphibian nerve -muscle experiments (ii) amphibian cardiac experiments

# Gastrointestinal Physiology

PY4.1 Describe the structure and functions of digestive system

PY4.2 Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion

PY4.3 Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.

PY4.4 Describe the physiology of digestion and absorption of nutrients. Describe the source of GIT hormones, their regulation and functions

PY4.6 Describe the Gut-Brain Axis

PY4.7 Describe & discuss the structure and functions of liver and gall bladder

PY4.8 Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests

PY4.9 Discuss the physiology aspects of: peptic ulcer, gastrooesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hitschsprungs disease

PY4.10 Demonstrate the correct clinical examination of the abdorder in a normal volunteer or simulated environment

# Cardiovascular Physiology

PY5.1 Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.

PY5.2 Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions

PY5.3 Discuss the events occurring during the cardiac cycle

PY5.4 Describe generation, conduction of cardiac impulse

PY5.5 Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis

PY5.6 Describe abnormal ECG, arrythmias, heart block and myocardial Infarction

PY5.7 Describe and discuss haemodynamics of circulatory system

PY5.8 Describe and discuss local and systemic cardiovascular regulatory mechanisms

PY5.9 Describe the factors affecting heart rate, regulation of cardiac output & blood pressure

PY5.10 Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation

PY5.11 Describe the patho-physiology of shock, syncope and heart failure

PY5.12 Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment

PY5.13 Record and interpret normal ECG in a volunteer or simulated environment

PY5.14 Observe cardiovascular autonomic function tests in a volunteer or simulated environment

PY5.15 Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment

PY5 16 Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment

#### Respiratory Physiology

PY6.1 Describe the functional anatomy of respiratory tract

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

PY6.3 Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide

PY6.4 Describe and discuss the physiology of high altitude and deep sea diving

PY6.5 Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.

PY6.6 Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia, drowning, periodic breathing

PY6.7 Describe and discuss lung function tests & their clinical significance

PY6.8 Demonstrate the correct technique to perform & interpret Spirometry

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a normal volunteer or simulated environment PY6.10 Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated entropy - 26
Page 480 of 527 Renal Physiology PY7.1 Describe structure and function of kidney PY7.2 Describe the structure and functions of juxla glomerular apparatus and role of renin-angiotensin system PY7.3 Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting

mechanism PY7.4 Describe & discuss the significance & implication of Renal clearance

PY7.5 Describe the renal regulation of fluid and electrolytes & acid-base balance PY7.6 Describe the innervations of urinary bladder, physiology of micturition and

its abnormalities

PY7.7 Describe artificial kidney, dialysis and renal transplantation

PY7.8 Describe & discuss Renal Function Tests

PY7.9 Describe cystometry and discuss the normal cystometrogram

Endocrine Physiology

PY8.1 Describe the physiology of bone and calcium metabolism

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

PY8.3 Describe the physiology of Thymus & Pineal Gland

PY8.4 Describe function tests: Thyroid gland, Adrenal cortex, Adrenal medulla and pancreas

PY8.5 Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome.

PY8.6 Describe & differentiate the mechanism of action of steroid, protein and amine hormones

Reproductive Physiology

- PY9.1 Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex
- PY9.2 Describe and discuss puberty; onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.
- PY9.3 Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness
- PY9.4 Describe female reproductive system. (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes

PY9.5 Describe and discuss the physiological effects of sex hormones

PY9.6 Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages

PY9.7 Describe and discuss the effects of removal of gonads on physiological

PY9.8 Describe and discuss the physiology of pregnancy, parturition & lactation Nulan Jany and outline the psychology and psychiatry-disorders associated with it.

PY9.9 Interpret a normal semen analysis report including (a) sperm count (b) 2021 sperm morphology and (c) sperm motility, as per WHO guidelines and 26 discuss the results

PY9.10 Discuss the physiological basis of various pregnancy tests

PY9.11 Discuss the hormonal changes and their effects during permenopause and menopause

PY9.12 Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.

# Neurophysiology

PY10.1 Describe and discuss the organization of nervous system

PY10.2 Describe and discuss the functions and properties of synapse, reflex, receptors

PY10.3 Describe and discuss somatic sensations & sensory tracts

PY10.4 Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus

PY10.5 Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)

PY10.6 Describe and discuss Spinal cord, its functions, lesion & sensory disturbances

PY10.7 Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities

PY10.8 Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production

PY10.9 Describe and discuss the physiological basis of memory, learning and speech

PY10.10 Describe and discuss chemical transmission in the nervous system.

(Outline the psychiatry element).

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

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

PY10.14 Describe and discuss patho-physiology of altered smell and taste sensation

PY10.15 Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing

PY10.16 Describe and discuss pathophysiology of deafness. Describe hearing tests

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

PY10.18 Describe and discuss the physiological basis of lesion in visual pathway

PY10.19 Describe and discuss auditory & visual evoke potentials

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

#### Integrated Physiology

PY11.1 Describe and discuss mechanism of temperature regulation

PY11.2 Describe and discuss adaptation to altered temperature (heat and cold)

PY11.3 Describe and discuss mechanism of fever, cold injuries and heatstroke

ouring exercise; physical training effects

PY11.5 Describe and discuss physiological consequences of secentary nest relative 21 Appendix - 26

PY11.6 Describe physiology of Infancy

PY11.7 Describe and discuss physiology of aging; free radical 2350 at 1827 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)

PY11.9 Interpret growth charts

PY11.10 Interpret anthropometric assessment of infants

PY11.11 Discuss the concept, criteria for diagnosis of Brain death and its implications

PY11.12 Discuss the physiological effects of meditation

PY11.13 Obtain history and perform general examination in the volunteer /simulated environment

PY11.14 Demonstrate Basic Life Support in a simulated environment

# 5. TEACHING LEARNING METHODS

- Interactive lectures
- DOAP (Demonstration-Observation Assistance- Performance) Sessions: Hematology experiments, Human experiments including Clinical examination, Computer assisted learning of frog and mammalian experiments, Demonstration of some human experiments
- Small Group Discussions
- Student seminars
- Graphs and charts to be made in the departments to teach different principles of physiology, as well as pathophysiology, and to provide problem-solving exercises
- Early Clinical Exposure
- Self Directed Learning

# Integration

Efforts are to be made to encourage integrated teaching between medical subjects. At the end of this leaching the student shall acquire an Integrated knowledge of organ structure, physiological and biochemical function, its regulatory mechanisms, its pathophysiology and principles of management.

#### **AETCOM Modules**

AETCOM (Attitude, Ethics & Communication) modules for the first year would be taught through various teaching learning methodologies and would also be assessed.

#### 6. ASSESSMENT

- a) Formative Assessment: Formative assessment shall be done periodically throughout the course.
  - i) Log Book: Log book is to be maintained to record all activities like seminar, symposia, early clinical exposure, AETCOM modules and other academic activities. It has to be submitted to the department regularly and would be assessed

regularly.

II) Certifiable competencies: Achievement of Certifiable competencies would also be recorded in logbooks: Associated as a competencies would also be recorded in logbooks: 123 of 527 student must have completed the required certifiable competencies and completed the log book to be eligible for appearing at the final university examination

# b) Internal Assessment:

 No less than three internal assessment exams shall be conducted during the course.

ii) Up To twenty percent IA marks (Theory and Practical) would be from Log book assessment.

iii) 50%combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations.

# c) Summative Assessment:

University (Professional) examination: Will have Theory, viva and practical examinations.

#### i) THEORY PAPERS

There shall be two theory papers. The student must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.

Each paper shall be of 03 hours duration and 100 marks.

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PAPER + (100 Marks)

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Topics:

Blood, CVS, Respiration, Kidney, GIT including Nutrition, and Integrated
Physiology

PAPER - II (100 Marks)

Topics:

Gen Physiology, Nerve – Muscle Physiology, CNS, Special Senses, Endocrines, Reproduction and Integrated Physiology

# THEORY QUESTION PAPER FORMAT (Applicable for Paper-I and Paper-II)

# Part I

Q 1 Objective Type Questions including MCQs	10*2=20
Part II	
Q 2a. Long structure question / Problem based question	10
Q2b.Physiological / Clinical significance	4'2 5 = 10
Q 3. Write Short Notes	4*5= 20
Part III	
Q4 a. Long structure question / Problem based question	10
Q4 b. Explain the following:	4*2 5 = 10
Q5. Describe Briefly / Short notes	4*5 = 20
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PAPER - I (100 Marks)

Topics: Blood, CVS, Respiration, Kidney, GIT Including Nutrition, Attitude, Ethics & Communication (AETCOM) and Integrated Physiology PAPÉR - II (100 Marks) Topics: Gen Physiology, Nerve - Muscle Physiology, CNS, Special Senses, Endocrines, Reproduction and Integrated Physiology THEORY QUESTION PAPER FORMAT (Applicable for Paper-I and Paper-II) Part I Q 1. Objective Type Questions including MCQs 10\*2=20 Part II Q 2/A. Long structure question / Problem based question Q2b.Physiological / Clinical significance 2\*5 = 10Q 3. Write Short Notes 4\*5= 20 Discussed
Telephonically
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18/1/2021 Part III Q4 a. Long structure question / Problem based question . 10 (ar dud Q4 b. Explain the following: 2\*5 = 10Q5. Describe Briefly / Short notes 4\*5 = 20 Neelon Janes Concelled

A.C. - 24.08.2021 1. Spotting/OSPE 10 marks Appendix - 26 Page 486 of 527 2 Problem solving exercise 10 marks 3. Graph and charts 05 marks (including those pertaining to Amphibian nerve muscle and heart experiments) 4. Human Experiment 15 marks 5. Haematology 15 marks 6 Clinical Exercise 10 marks 7. Practical record book 05 marks Total 70 marks VIVA 30 marks

Note:

**Grand Total** 

Internal Assessment: 50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations

100 marks

University Examination: Mandalory 50% marks in theory and practical (theory=theory paper(s) only) (practical= practical/clinical + viva)

Internal assessment marks are not to be added to marks of the University examinations and should be shown separately in the grade card.

A candidate obtaining 75 % marks in theory plus practicals shall be declared to have passed the subjects with Honors.

A maximum number of four permissible altempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial altendance at any University examination shall be counted as an availed attempt.

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# 7. RECOMMENDED READING

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# (A) TEXT BOOKS

- Guyton & Hall Textbook of Medical Physiology, Second South Asia Edition-Elsevier
- 2. Comprehensive Textbook of Medical Physiology- G K Pal Second Edition-Jaypee

Brothers

- 3 Textbook of Physiology 8 Ed. A. K. Jain- Avichal
- 4. Understanding Physiology by Dr. R.L. Bijlani
- 5. Medical Physiology by Indu Khurana
- 6. Human Physiology 13th Ed C C Chatterjee

# (B) REFERENCE BOOKS

- 1. Ganong's Review of Medical Physiology, 26 Ed. Lange Publisher
- 2. Lippincott's Illustrated Reviews, 2 Ed. Preston & Wilson, Wolter Kluver
- 3. Objective Structured Practical Examination in Physiology, Aarti Sood Mahajan, Jaypee Brothers Medical Publishers (P) Ltd

# (C) PRACTICAL BOOKS

- 1. Manual of Practical Physiology For M.B.B.S. 6- Ed. A. K. Jain Arya publications
- 2 Practical Physiology V.P. Varshney & Mona Bedi Jaypee Brothers
- 3. Textbook of Practical Physiology 4- Ed. G K Pal-University Press
- 4. Ghai's Textbook of Practical Physiology 9th Ed

#### (D) CLINICAL EXAMINATION

- 1. Bates' Guide to Physical examination and History Taking Uzma Firdaus- Wolters Kluwer
- 2. Hutchinson's Clinical Methods.
- 3. Macleod's Clinical Examination 14 th ed

# (E) AETCOM

Jonsen AR, Siegler M, Winslade WJ. Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine. 8th Edition. New York: McGraw-Hill, Inc., 2015

Timms O. Biomedical Ethics. 2nd Edition. Elsevier India, 2019

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# 7. RECOMMENDED READING

- (A) TEXT
- (B) S
- 1. Guyton & Hall Textbook of Medical Physiology, Second South Asia Edition-Elsevier
- 2. Comprehensive Textbook of Medical Physiology- G K Pal Second Edition-Jaypee

**Brothers** 

- 3. Textbook of Physiology latest Ed. A. K. Jain- Avichal
- 4. Understanding Physiology by Dr. R.L. Bijlani
- 5. Medical Physiology by Indu Khurana
- 6. Human Physiology latest Ed C C Chatterjee

# (B) REFERENCE BOOKS

- 1. Ganong's Review of Medical Physiology, latest Ed. Lange Publisher
- 2. Lippincott's Illustrated Reviews, latest Ed. Preston & Wilson, Wolter Kluver
- 3. Objective Structured Practical Examination in Physiology, Aarti Sood Mahajan, Jaypee Brothers Medical Publishers (P) Ltd

#### (C) PRACTICAL BOOKS

- 1 Manual of Practical Physiology For M.B.B.S. latest Ed. A. K. Jain Arya publications
- 2. Practical Physiology V.P. Varshney & Mona Bedi Jaypee Brothers
- 3. Textbook of Practical Physiology latest Ed. G K Pal-University Press
- 4. Ghai's Textbook of Practical Physiology 9th Ed

# (D) CLINICAL EXAMINATION

- 1. Bates' Guide to Physical examination and History Taking Uzma Firdaus- Wolters Kluwer
- 2. Hutchinson's Clinical Methods.
- 3. Macleod's Clinical Examination latest ed

#### (E) AETCOM

Jonsen AR, Siegler M. Winslade WJ. Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine. latest Edition. New York: McGraw-Hill, Inc., 2015

Timms O. Biomedical Ethics. latest Edition. Elsevier India, 2019

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Topic: Gene	eral Physiology Number of compe	tencles: (09)		Appendix - 26
PY1.1	Describe the structure and functions of a mammalian cell	K	. КН	Page/489 of 52
PY1,2	Describe and discuss the principles of homeostasis	K	KH	Y // // // // // // // // // // // // //
PY1.3	Describe intercellular communication	К	KH	Y
PY1.4	Describe apoptosis – programmed cell death	K	KH'	Y = 100 mm
PY1.5	Describe and discuss transport mechanisms across cell membranes	K	Кн	Y
PY1.6	Describe the fluid compartments of the body, its ionic composition & measurements	К	KH	Y
PY1.7	Describe the concept of pH & Buffer systems in the body	К	KH	Y
PY18	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue	К	КН	Y
PY19	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

Topic: Haematology Number of competencies: (13)

lumber	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	
PY2,1	Describe the composition and functions of blood components	К	КН	Y	
PY2 2	Discuss the origin, forms, variations and functions of plasma proteins	K	КН	Y	
PY2.3	Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin	К	КН	Here a constant	
PY2 4	Describe RBC formation (erythropoiesis & its regulation) and its functions	К	КН	Y	
PY2.5	Describe different types of anaemias & Jaundice	К	KH	Y	
PY2.6	Describe WBC formation (granulopolesis) and its regulation	К	КН	<b>Y</b>	
PY2.7	Describe the formation of platelets, functions and variations.	К	KH	Y de la company	
PY2.8	Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)	К	КН		
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfus on	К	КН	Neel	<b>()</b> 4

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# Number of procedures that require certification: (NIL)

Suggested Feaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
Lecture, Small group discussion				to preside as
Lecture, Small group discussion	Written/Viva voce		resolates est	Biochemistry
Lecture, Small group discussion	Written/Viva voce		8413981	Biochemistry
Lecture, Small group discussion	Written/Viva			
Lecture, Small group discussion	Written/Viva - voce		Pathology	Biocheniistry
Lecture, Small group discussion	Written/Viva			
Lecture, Small group discussion	Written/Viva		To exist unio	
Lecture: Small group discussion	Written/Viva		Pathology	
Lecture, Small group discussion, ECE- Visit to blood bank	Written/Viva voce		Pathology	

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PY2.11	Estimate Hb, RBC, TLC, RBC	S	SH	A.C. 24.08.20
12.11	indices, DLC, Blood groups, BT/CT	3	3ri	
<sup>2</sup> Y2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc.	K	КН	Page 491 of 52
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY2.13	Describe steps for reticulocyte and platelet count	К	KH ·	Y
Topic: Nerve	and Muscle Physiology		Number of con	npetencies: (18)
PY3 1	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	K	KH	Y
PY3.2	Describe the types, functions & properties of nerve fibers	К	КН	Y
PY3 3	Describe the degeneration and regeneration in peripheral nerves	К	КН	Y
PY3.4	Describe the structure of neuro- muscular junction and transmission of impulses	К	КН	Y - Y - Y - Y - Y - Y - Y - Y - Y - Y -
PY3.5	Discuss the action of neuro- muscular blocking agents	K	KH	Y
PY3 6	Describe the pathophysiology of Myasthenia gravis	К	KH	- Y
PY3.7	Describe the different types of muscle libres and their structure	K	КН	Y
PY3.8	Describe action potential and its properties in different muscle types (skeletal & smooth)	К	KH	<b>Y</b>
PY3 9	Describe the molecular basis of muscle contraction in skeletal and in smooth muscles	K	KH	Y
PY3.10	Describe the mode of muscle contraction (isometric and isotonic)	К	KH -	Y
PY3.11	Explain energy source and muscle metabolism	К	KH	Y
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY3,12	Explain the gradation of muscular activity	К	КН	Y
PY3.13	Describe muscular dystrophy myopathies	К	KH	Y
PY3 14	Perform Ergography	S	SH	Y
PY3.15	Demonstrate effect of mild, nioderate and severe exercise and record changes in cardiorespiratory parameters		SH	Y
PY3.16	Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment		SH	Y
PY3.17	Describe Strength-duration curve		KH	Y
PY3.18	Observe with Computer assisted learning (i) amphibian nerve - muscle experiments (ii) amphibian cardiac experiments	S	КН	·

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OAP sessions	0		D-d-S	
JUAP sessions	Practical/OSPE/		Pathology	
Domonstration	Viva voce Written Niva	***************************************	Dathalagu	
Conunstration	voce		Pathology	
		,		
Suggested Feaching Learning nethod	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration
Demonstration	Written /Viva		Pathology	
Number	voce of procedures that	it require certifi	cation: (NIL)	
		artis Complete (Co.		The react street selects
Lecture, Small group discussion	Written/V₃va voce			Human Anatomy
Lecture Small	Written/Viva			9-1 (13 (14 (14 (14 (14 (14 (14 (14 (14 (14 (14
Lecture Small	Voce Worten/Viva		General	
group discussion			Medicine	
Lecture, Small group discussion	Written/Viva		Anaesthesiology	
Lecture, Small	Written/Viva .		Anaesthesiology	
group discussion			, Pharmacology	
Lecture, Small	Written/Viva		Pathology	
group discussion Lecture, Small	Voce Written/Viva			
Lecture, Small group discussion				Human Anatomy
Lecture, Small	voce. Watten/Viva		The sales of the sales	PRODUCTION TO A SHOOT
group discussion	Adde			
Lecture Small	Written/Viva			
group discussion	voce .			
Lecture, Small group discussion	Written/Viva			
Lecture Small	Written/Viva			Biochemistry
group discussion				diocricinistry
Suggested	Suggested	Number	Vertical	Horizontal
Teaching	Assessment	required to	Integration	Integration
Learning · · · · · · · · · · · · · · · · · · ·	method	certify		
Lecture, Small	Written/Viva		General	
group discussion			Medicine	
Lecture, Smail	Written/Viva		General	Human Analom
group discussion		TERRIE	Medicine	
DOAP sessions	Practical/OSPE/ Viva voce			radi Pistolewa
DOAP sessions	Practical/OSPE/ Viva voce			
DOAP sessions	Proctical/OSPE/ Viva voce			
Lecture, Small	Written/Viva			
group discussion				
Demonstration, Computer assisted learning methods	Practical / Viva			integral occurs sand

Jelen Jorey

PY4.1	Describe the structure and functions of digestive system	К	KH	A.C 24.08.202
Pyg 2	Describe the composition, mechanism of secretion, functions and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	f secretion, functions n of saliva, gastric, testinal juices and		Appendix - 26 Page 493 of 527
PY4.3 Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.  PY4.4 Describe the physiology of		K	КН	
PY4.4	Describe the physiology of digestion and absorption of nutrients	K	КН	Y .
Number COMPETENCY [		Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY4.5	Describe the source of GIT hormones, their regulation and functions	K	KH	Y
2Y4.6	Describe the Gut-Brain Axis	К	КН	v Cara de V
PY4.7	Describe & discuss the structure and functions of liver and gall bladder	K	Кн	×
PY4 8	Describe & discuss gastric function tests, pancreatic exocrine function (ests & liver function tests	К	KH .	Y
PY4.9 .	Discuss the physiology aspects of: poptic ulcer, gastro- desophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic iteus, Thirschspring's disease	К	КН	Y
PY4 10	Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment	S	SH	. V
	vascular Physiology (CVS)		Number of cor	npetencies: (16)
PY5 i	Describe the functional anatomy of heart including chambers, sounds and Pacemaker tissue and conducting system.	К	KH	Y
PY5 2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	К	Krl	Y
PY5.3	Discuss the events occurring during the cardiac cycle	К	КН	Y
PY5 4	Describe generation, conduction of	К	KH KH	Y
PY5.5	Describe the physiology of electrocardiogram (E.C.G.), its applications and the cardiac axis	K	КН	<b>Y</b>
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Care (Y/N)
PY5 6	Describe abnormal ECG, arrythmias, heart block and myocardial Infarction	K	КН	Y

Julan Orney

ecture Small	Written/Viva			Human Anatomy	A.C 24.08.2021
roup discuss on				namair is acamy	Appendix - 26
	Written/Viva			Biochemistry	Page 494 of 527
ecture Small	Watten/Viva				
ranp discussion					
ecture, Small roup discussion	Written/Viva voce			Biochemistry	Grand, Science of the Control of the
eaching	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration	
ecture Small roup discussion	Written/Viva voce				
roup discussion	Written/Viva				
ecture, Small group discussion	Written/Viva voce			Biochemistry	
group	Writton/Viva voce			Biochemistry	
discussion, Demonstration Esophageal Manometry & endoscopy					
	Written/Viva voco	THE CONTRACTOR AND ADDRESS OF THE CO	General Medicine	Biochemistry	
DOAP session	Skill assassment V.va.voce/OSCE				
Number of	procedures that re	equire certifica	tion: (03)		
Lecture, Small group discussion	Written/Viva			Human Anatomy	
Lecture, Small group discussion	Written/Viva vace	and the second s			
Lecture Small group discussion	Written/Viva	SANCE AND COMMENTS			
Locture, Small	Written/Viva	FTTAIR T			
group discussion					
Lecture, Small group discussion	Wrillen/Viva voce		General Medicine		
Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration	
Lecture, Small group discussion	Written/Viva		General Medicine	Human Anatomy	.0

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Y5 8	Describe and discuss local and systemic card ovascular regulatory mechanisms	К	KH	A.C 24.08.202 Appendix - 26
PY5 9	Describe the factors affecting heart rate regulation of cardiac output & blood pressure	К	КН	Page 495 of 52
PY5 10	Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	К .	KH	Y
PY5.11	Describe the patho-physiology of shock, syncope and heart failure	K	КН	Y
PY5.12 Record blood pressure & pulso at rest and in different grades of exercise and postures in a volunteer or simulated environment		S	SH	Y
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment	S	· SH	Y
PY5 14	Observe cardiovascular autonomic function tests in a volunteer or i simulated environment	S	SH	N
PY5.15	Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S	SH	Y
PY5.16	Record Arterial pulse tracing using linger plethysmography in a volunteer or simulated environment	S	SH	N
Topic Respi	ratory Physiology		Number of cor	npelencies: (10)
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY6.1	Describe the functional anatomy of respiratory tract	K	КН	Y
PY6.2	Describe the mechanics of	К	KH	Y
	normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension compliance, airvay resistance ventilation, V/P ratio, diffusion capacity of lungs.			
PY6 3	changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, already resistance, ventilation, V/P ratio, diffusion capacity of lungs.  Describe and discuss the transport of respiratory gases.	К	КН	Y
PY6-3 PY6.4	changes during ventilation, lung volume and capacities, alveolar surface tension compliance, already resistance ventilation. V/P ratio, diffusion capacity of lungs.  Describe and discuss the transport of respiratory gases. Oxygen and Carbon dexide.  Describe and discuss the physiology of high allitude and	K	КН	Y
	changes during ventilation, lung volume and capacities, alveolar surface tension compliance, alrivary resistance ventilation. V/P ratio, diffusion capacity of lungs.  Describe and discuss the transport of respiratory gases. Oxygen and Carbon discuss the physiology of high allitude and deep sea diving.  Describe and discuss the principles of artificial respiration oxygen therapy, acclimatization.	7-1		
PYG.4	changes during ventilation, lung volume and capacities, alveolar surface tension compliance, arrway resistance ventilation. V/P ratio, diffusion capacity of lungs.  Describe and discuss the transport of respiratory gases. Oxygen and Carbon doxide.  Describe and discuss the physiology of high allitude and deep sea diving.  Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.  Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia,	К	КН	Y Y
PY6.4 PY6.5	changes during ventilation, lung volume and capacities, alveolar surface tension compliance, arrway resistance ventilation. V/P ratio, diffusion capacity of lungs.  Describe and discuss the transport of respiratory gases. Oxygen and Carbon dexide.  Describe and discuss the physiology of high allitude and deep sea diving.  Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.  Describe and discuss the pathophysiology of dyspnoea,	K K	КН	Y

Lecture, Small	Written/Viva	**************************************			A.C 24.08.2021 Appendix - 26
roup discussion	Yoce.		Table 1	da inggalang na ann ng anggalangan	Page 496 of 527
Lecture Small group discussion	Written/Viva voce				
Lecture Small group discussion	Written/Viva vocq		General Medicine		
Lecture, Small group discussion	Written/Viva				
DOAP sessions	Practical/OSPE/ Viva voce	1 each x 3		•	
DOAP sessions	Practical/OSPE/ Viva voce		General Medicine		
DOAP sessions	Skill assessmenV Viva voce				
DOAP sessions	Practical/OSPE/ Viva voce	·			
DOAP sessions, Computer assisted learning methods	Viva voce		General Medicine		
Numbe	r of procedures	that require certi	fication: (01)		
Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical integration	Horlzontal Integration	
Lecture, Small group discussion	Written/Viva				
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	delining the state of the state				
Lecture Small group discussion	Written/Viva		AND CONTRACTOR OF THE CONTRACT		
Lecture, Small group discussion	Written/Viva				
Lecture, Small group discussion	Written/Viva voce		TO THE STATE OF TH		
Lecture, Small group discuss an	Written/Viva voce				
	Written/Viva	77.74.515	=======================================		
Lecture, Small group discussion DOAP sessions			Respiratory		

	simulated environment			
PY6.10	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment	S	SH	A.C. <del>- 24.08</del> .202 Appendix - 26 Page 497 of 52
Topic: Renal	Physiology		Number of compa	etencies: (09)
<sup>2</sup> Y7.1	Describe structure and function of kidney	K	кн	Y
FY7 2	Describe the structure and functions of juxta glomerular apparatus and role of renin- angiotensis system	К	KH	Y
Yumber	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY7.3	Describe the mechanism of urine formation involving processes of fittration, tubular reabsorption & secretion; concentration and diluting mechanism	К	Кн	Y 100
PY7.4	Describe & discuss the significance & implication of Renal clearance	K	KH	Y Comment
PY7.5	Describe the renal regulation of fluid and electrolytes & acid-base balance	K	КН	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	К	KH	Y
PY7.7	Describe artificial kidney, dialysis and renal transplantation	К	KH	Y
PY7 8	Describe & discuss Renal Function Tests	К	KH	Y
PY7.9	Describe cystometry and discuss the normal cystometrogram	K	KH .	Y

Number of competencies: (06)

PY8.1	Describe the physiology of bone and calcium metabolism	К	КН	Y.
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	кн	Y
PY8 3	Describe the physiology of Thymus & Pineal Gland	К	КН	Υ.
PY8 4	Describe function tests: Thyroid gland Adrenal cortex, Adrenal medulla and pancreas	К	КН	Y
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY8.5	Describe the metabolic and endocrine consequences of obesity & metabolic syndrome. Stress response. Outline the psychiatry component pertaining to metabolic syndrome.	К	КН	Y
PY8.6	Describe & differentiate the mechanism of action of steroid, protein and amine hormones	К	КН	Y

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	Viva vace/OSCE			Commence of the contract of th	A.C 24.08.2021 Appendix - 26
	Practical/OSPE/ V va voce				Page 498 of 527
Number	of procedures that	require certific	ation (NIL)		
	Written/Viva		Emyn America	1 Carron	
roup discussion				-4:0	
	Written/Viva				
Suggested Feaching Learning nethod	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration	
eclure, Sma'l group discussion	Written/Viva voce				
Lecture, Small group discussion	Written/Viva				
Lecture Small group discussion					
Lecture, Small group discussion					
Lecture Small group discussion	Written/Viva		General Medicine		
Lecture, Small	Written/Viva			Biochemistry	
group discussion Lecture Small	Written/Viva		ONEN CONTRACTOR OF CONTRACTOR		
icieeuseib nuore) Num	ber of procedures	that require ce	rtification : (NIL)	4 (1)	
			4		
Lecture, Small group discussio	Written/Viva				
Lecture, Small group discussio	Written/Viva	The state of the s	San years of the san o		
	Land In the Control of the Control o				
Lecture Small	Written/Viva			,	
Lecture, Small group discussion	Written/Viva			Biochemistry	
Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration	
Lacture Small group discussi					
Lecture, Smal					

	Describe and discuss sex determination; sex differentiation	K	KH	A.C 24.08.2
	and their abnormities and outline psychiatry and practical implication of sex determination.			Appendix - 26 Page 499 of 5
Y92	Describe and discuss puberly:	K	KH	Y
	onset, progression, stages, early and delayed puberty and outline adolescent clinical and psychological association		NI Section 1997	
2.64	Describe male reproductive system: functions of testis and control of spermatogenesis &	K	KH	Y
	factors modifying it and outline its association with psychiatric illness			
?Y9.4	Describe female reproductive system: (a) functions of ovary and its control, (b) menstrual cycle - hormonal, uterine and ovarian changes	К .	КН	Y
PY9 5	Describe and discuss the physiological effects of sex hormones	К	Кн	Y
PY96	Enumerate the contraceptive methods for male and female Discuss their advantages & disadvantages	К	КН	Y
PY9.7	Describe and discuss the effects of removal of gonads on physiological functions	К	KH	Y
Vumber	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY9.8	Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.	к	KH	Y
PY9 9	Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm morphology and (c) sperm motility as per WHO guidelines and discuss the results	К	KH	Y
PY9.10	Discuss the physiological basis of various pregnancy tests	К	КН	Υ
PY9.11	Discuss the hormonal changes and their effects during perimenopause and menopause	К	KH	Y
PY9 12	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility	К	КН	Y
Topic: Neurop	hysiology	Number o	f competencies:	(20)
Y10.1	Describe and discuss the organization of nervous system	К	КН	Υ Υ
PY10.2	Describe and discuss the functions and properties of synapse, reflex. receptors	К	кн	Y
PY10.3	Describe and discuss somatic sensations & sensory tracts	К	КН	Y
PY10.4	Describe and discuss molor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus	ĸ	KH	Necl

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Lecture, Small group discussion	Watten/Viva			Human Analomy	Appendix - 26 Page 500 of 527
Lecture Small	Written/Viva		1404		
group discussion					
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Lecture, Small group discussion	Written/Viva voce				
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Lecture, Small group discussion	Written/V va voce				
Lecture Small	Written/Viva				
group discussion	voce				
Lecture, Small group discussion	Written/V va		Obstetrics & Gynaecology, Community Medicine		
Lecture, Small group discussion	Written/Viva voce				
Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Rorizontal Integration	
tecture, Small group discussion	Written/Viva		Obstetrics & Gynaccology		
Lecture, Small group discussion	OSPE/Viva voce				
Lecture, Small	Written/Viva	COMPANIE A 1887 M	en e		
group discussion	VOCE		Obstetrics & Gynaecology		
Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology		
Lecture, Small group discussion	Written/Viva voçe		Obstetrics & Gynaecology		
Number	of procedures tha	t require certifica	tion: (09)		
Lecture, Small group discussion	Written/Viva			Human Anatomy	
Lecture, Small	Written/Viva		•	Human Anatomy	W. 1
Lecture, Small group discussion.	Written/Viva		And the state of t	Human Anatomy	
Lecture, Small group discussion	Written/Viva			Human Analomy	

Nulam Jary

	system, autonomic nervous system (ANS)			A.C 24.08 20
PY10 6	Describe and discuss Spinal cord, its functions, lesion & sensory disturbances	K	KH	Appendix - 26 Page 501 of 52
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY10.7	Describe and discuss functions of cerebral codex, basal ganglia, thatanus, hypothalamus, cerebellum and limbic system and their abnormalities	K	КН	Y
Y10.8	Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production	К	KH	Y Za Zan
Y10.0	Describe and discuss the physiological basis of memory, learning and speech	К	KI-#	Y
Y10.10	Describe and discuss chemical transmission in the nervous system, (Outline the psychiatry element)	К :	. Кн 	Y
Y10.11	Demonstrate the correct clinical examination of the nervous system. Higher functions, sensory system, motor system, reflexes, cranial nervos in a normal volunteer or simulated environment.	S	P	Y (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
Y10:12	Identify normal EEG forms	S.	S	Y
PY10-13	Describe and discuss perception of	К	KH	Y
PY10 14	sinell and taste sensation  Describe and discuss patho- physiology of altered smell and tasto sensation	K	Кн	Y
27 10 15	Describe and discuss functional influency of ear and auditory pathweys & physiology of hearing	К	ĶН	Y
°Y10.16	Describe and discuss pathophysiology of deafness Describe hearing tests	К	КН	Y
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	КН	Y TO STATE OF THE
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
Y10.18	Describe and discuss the physiological basis of lesion in visual pathway	к	KH	Y
PY 10 19	Describe and discuss auditory & visual evoke potentials	К	КН	Y
PY10 20	Demonstrate (s) Testing of visual actually, colour and field of vision and (ii) hearing (iii) Testing for sinell and (iv) taste sensation in volunteer/ simulated environment	S	P	Y
Topic: Integrate	d Physiology	Numb	er of competencie	es: (14)
°Y11.1 🗼 😯	Describe and discuss mechanism	К	КН	In Yich renantialistic

Julan Jary

A.C	24.0	08.2021
Appe	ndix	- 26
Page	<b>502</b>	of 527

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ecture, Small	Written/Viva	TARREST AND		Human Anatomy
roup discussion	voce			
uggested	Suggested	Number	Vertical	Horizontal
eaching	Assessment	required to	Integration	Integration
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nethod		P		
ecture, Small	Written/Viva	Sac Silver	Psychiatry	Human Anatomy
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edia - Japania				15-0-17-0
ecture, Small	Written/Viva	<b>是</b> 为《学师》。	Psychiatry	
group discussion	VOCE			
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ecture, Small	Written/Viva		Psychiatry	- 10 Feb. 20 May 2 1 1 1 1 1
group discussion			, , , , , , , , , , , , , , , , , , , ,	
			Marine Marine	
_ecture Small	Written/Viva			NEEDS TO THE
roup discussion	AOCI3			
		<u> </u>	an n	
DOAP sessions	Skill	1 each	Company of the State of the Company	Human Anatomy
	assessment/	(total 5)		One as to the Carlo
	Viva voce/OSCE			Linch Pir particle
				Piccoulo State of the
	Action 1			
Small group	OSPE/Viva voce		Psychiatry Psychiatry	
leaching .			ayeneauy.	
Lecture Small	Written/Viva		ENT	
group discussion				lander i nicacal
Lecture, Small	Written/Viva		ENT	
group discussion	voce			
Lecture, Small	Written/Viva	- 10 m - 10 m - 10 m	ENT	
group discussion				
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Lecture, Small	Written/Viva	1-1-23 J	ENT	
group discussion	voce			Light that Bree
Lecture, Small	Written/Viva		Ophilialassias	115 - 2025 - 10 - 75 52
group discussion			Ophilhalmology	the specialist of
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		all the Vietna		
Suggested	Suggested	Number	Vertical	Horizontal
Teaching	Assessment	required to	Integration	Integration
Learning	method	certify	i santani	and the short of the
method	September 28 Property	Р	offs day repeated	Sept minus
Lecture, Small	Written/Viva	Market S.	Optithalmology	100 100 10
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Lecture, Small	Written/Viva		Onlybalmalas	
group discussion			Ophthalmology	
DOAP sessions	Skill	1 each	ENT.	
	assessment	(lotal 4)	Ophthalmology	
	Viva voce		and the trace	
	Targette magnitud	To the first series		
No C				
Muniper of p	rocedures that re	equire certification	on: (NIL)	
Lecture Small	Written/Viva			-
group discussion	lynen			

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	cold)		March . The Co	
PY11.3	Describe and discuss mechanism of fever, cold injuries and heat stroke	К	КН	A.C 24.08.202 Appendix - 26 Page 503 of 527
PY11,4 .	Describe and discuss cardio- respiratory and metabolic adjustments during exercise physical training effects	К	КН	Y
PY11,5	Describe and discuss physiological consequences of sedentary lifestyle	K	КН	Y
PY11.6	Describe physiology of Infancy	K	, KH	N
PY11.7	Describe and discuss physiology of niging, free radicals and antioxidants	К	. KH	N
DY 41 A	Discuss 8 compare cardio- respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold)	K	КН	Y
Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
PY119	Interpret growth charts	К	кн	N .
PY11.10	Interpret anthropometric assessment of infants	K	<b>У</b> , КН	N
PY11.11	Discuss the concept, criteria for diagnosis of Brain death and its implications	K	КН	2 44 Y
PY11.12	Discuss the physiological effects of meditation	K	KH KH	N
PY11.13	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	
Ecunic	Dayonstrate Basic Life Support in a simulated environment	S	SH	Y
	. The first of the first of the control of the first of t			

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. Column D: K – K DOAP session – Demonstrate, Observe, Assess, Perform.

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

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Lecture Small group discussion	Written/Viva				Page 504 of 527
Lecture: Small group discussion	Written/Viva voce				
Locture, Small group discussion	Written/Viva				
Lecture, Small group discussion	Written/Viva		Pediatrics		
Lecture, Small group discussion	Writter/Viva voce				
Lecture, Small group discussion	Written/Viva				
Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration	
Small group teaching	Practical/OSPE/ Viva voce		Pediatrics		
Small group teaching	Practical/OSPE/ Viva voce		Pediatrics		
Lecture, Small group discussion	Written/Viva voce				
Lecture Smali group discussion			Property of the		
DOAP sessions	Skill assessment Vava voce				
DOAP sessions	OSCE		General		

Anacsthesiology .

Inows, KH - Knows How, SH - Shows how, P- performs independently, Column F:

Medicine,

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	The student should be able to:	A.C <sup>K/S/</sup> 24.08.202 Appendix - 26
PY1.1	Describe the structure and functions of a mammalian cell	Page 505 of 527
PY1.2	Describe and discuss the principles of homeostasis	K
PY1.3	Describe intercellular communication	K
PY14	Describe apoptosis – programmed cell death	K
PY1.5	Describe and discuss transport mechanisms across cell membranes	K
PY1.6	Describe the fluid compartments of the body, its ionic composition & measurements	K
PY1.7	Describe the concept of pH & Buffer systems in the body	K
PY1.8	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue	. К
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	d K



SH/P	2010 (1111)	Teaching	Assessment	required to	A.C 24.08	
		Learning method	method	certify P	Page 506	f 527
KH.	Y	Lecture, Small group discussion	Written/Viva			
КН	Y	Lecture, Small group discussion	Written/Viva			
KH '	Y	Lecture, Small	Written/Viva			
KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
KH	Y	Lecture, Small group discussion	Written/Viva			
KH	Y	Lecture, Small group discussion	Written/Viva			
KH	Y	Lecture Small group discussion	Written/Viva			
KH	Y	Lecture, Small group discussion	Written/Viva			
KH	Ÿ	Lecture, Small group discussion	Written/Viva voce			



			A.C 24.08.202 Appendix - 26 Page 507 of 527
Biochemistry			
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Number	COMPETENCY	Domain	Level K/KH/	A.C 24.08.2021	
	The student should be able to:	K/S/A/C	SHIP	Page 508 of 527	
Pr31	Describe the structure and functions of a neuron and neuropha. Discuss Norve Growth Factor & other growth	. K	KH	Y	
PY3 2	factors/cytokines	K	KH .	Y	
	Describe the types, functions & properties of nerve fibers	Company of the second	NH .		
PY3 3	Describe the degeneration and regeneration in peripheral nerves	· K	KH	Y	
PY3.4	Describe the structure of neuro- muscular junction and transmission of impulses	К	KH	Y	
PY3.5	Discuss the action of neuro- muscular blocking agents	К	KH	Y	
PY3.6	Describe the pathophysiology of Myasthenia gravis	К	KH '	Y	
PY3.7	Describe the different types of muscle fibres and their structure	К	KH	Y	
PY3.8	Describe action potential and its properties in different muscle types (skeletal & smooth)	K	KH	Y	
PY3.9	Describe the molecular basis of muscle contraction in skeletal and in smooth muscles	K	KH ·	Y	
PY3.10	Describe the mode of muscle contraction (isometric and isolanic)	K	KH.	Y	
PY3 11	Explain energy source and muscle metabolism	К	KH	Y	
PY3,12	Explain the gradation of muscular activity	К	КН	Y	
PY3.13	Describe muscular dystrophy myopathies	жК	КН	Y	
PY3 14	Perform Ergography	S	SH	Y	
PY3 15	Demonstrate effect of saild, moderate and severe exercise and record changes in cardiorespiratory parameters	S	SH	Y	
PY3.16	Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment	S	SH	Y	
PY3.17	Describe Strength-duration curve	К	KH	Y	
PY3 18	Observe with Computer assisted learning (i) amphibian nervemuscle experiments (ii) amphibian cardiac experiments	S	кн	T O	



ouggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration	A.C 24.08.2021 Appendix - 26 Page 509 of 527
Lecture, Small group discussion	Written/Viva voce		10 2 W	Human Anatomy	Page 509 of 527
Lecture, Small	Written/Viva			5 (10 th - P) (10 (10 th ) 5 (10 th	
group discussion					
Lecture, Small group discussion			General Medicine		
Lecture, Small group discussion	Written/Viva voce		Anaesthesiology		
Lecture, Small group discussion	Written/Viva		Anaesthesiology . Pharmacology		
Lecture, Small group discussion	Written/Viva		Pathology		
Lecture Small group discussion	Written/Viva			Human Anatomy	
Lecture, Small group discussion	Written/Viva , voce				
Lecture, Small- group descussion	Written/Viva vace				
Lecture, Small, group discussion	Written/Viva				
Locture Small group discussion				Biochemistry	545 (25, 15, 15) 10, 64, 100
Lecture, Small group discussion			General Medicine		
Lecture, Small	Written/Viva		General	Human Anatomy	
group discussion DOAP sessions			Medicine		
	Practical/OSPE/ Viva voce			Marie Alkerting	
DOAP sessions	Practical/OSPE/ Viva voce				
DOAP sessions	Practical/DSPE/ Viva vace				6.5
Lecture, Small group discussion	Written/Viva			versalinger is n	100
Demonstration, Computer assisted learning methods	Practical / Viva voce				

Vumber	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Appendix	A.C 24.08.202 Appendix - 26	
				Page 510	of 52	
Y5 1	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting	K	КН	Y.		
	system.				1	
PY5 2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	K	KH	Y	S	
2Y5 3	Discuss the events occurring during the cardiac cycle	К	Кн	Υ.		
PY5.4	Describe generation, conduction of cardiac impulse	K	KH	Y		
PY5.5	Describe the physiology of olectrocardiogram (E.C.G.), its applications and the cardiac axis	К	KH	· Y		
PY5 6	Describe abnormal ECG arrythmias, heart block and myocardial Infarction.	К	· KH	Y	22.	
PY5 7	Describe and discuss haemodynamics of circulatory system	K	КН	Y .		
PY5.8	Describe and discuss local and systemic cardiovascular regulatory mechanisms	K	Kit	Y		
PY5.9	Describe the factors affecting heart rate, regulation of cardiac output & blood pressure	К	KH	Y		
PY5 10	Describe & discuss regional circulation including interocirculation, tyrophatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	K	КН	Y		
PY5.11	Describe the pathe-physiology of shock, syncope and heart failure	К	КН	Y		
PY5.12	Record blood pressure 8 pulse at rest and in different grades of exercise and postures in a voluntuer or simulated environmen		SH	Y		
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment	· S	SH	Y		
PY5.14	Observe cardiovascular autonomic function tests in a volunteer or simulated environment	S	SH	N		
PY5.15	Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S	SH	Y		
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment		SIH	N		

suggested Teaching Learning method	auggested Assessment method	Rumber required to certify	Vertical Integration	Horizontal Integration
Lecture Small group discussion	Written/Viva voce			Human Anatomy
Lecture Small group discussion	Written/Viva			
Lecture, Small group discussion	Written/Viva		re (A.R. PAC) Serveros	Constitution of the Consti
Lecture, Small group discussion	Written/Viva voce			
Lecture, Small group discussion	Written/Viva voce		General Medicine	
Lecture Small group discussion	Written/Viva Voce		General Medicine	Human Anatomy
Lecture, Small group discussion	Written/Viva voce			
Locture, Small group discussion	Written/Viva voce			
Lecture Small	Written/Viva			

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General

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Medicine

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Medicine

group discussion voce

group discussion voce

group discussion voce

Written/Viva

Written/Viva

Viva voce

Viva voce

Skill assessment/ Viva voce

Practical/OSPE/

Practical/OSPE/

Practical/OSPE/ Viva voce

Practical/OSPE/

Viva voce

Locture, Small

Lecture, Small

DOAP sessions

DOAP sessions

DOAP sessions

DOAP sessions

DOAP sessions,

assisted learning methods

Computer

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Number ,	The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	A.C. 24.0 Appendix Page 512	<del>-</del> 26
PY6.1	Describe the functional anatomy of respiratory tract	K	KH	Y	
PY6.2	Describe the mechanics of	К	KH	Y	
108	normal respiration, pressure changes during ventilation, lung volume and capacities alveolar surface tension, compliance, privay resistance, ventilation, V/P ratio, diffusion capacity of lungs				
PY6.3	Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide	К	Кы	Y	
PY6.4	Describe and discuss the physiology of high altitude and deep sea diving	K	KH	Y	
PY6.5	Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.	K	КН	Y	
PY6 6	Describe and discuss the pathophysiology of dysphoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing	K	Кн	<b>Y</b> (1)	
PY6 7	Describe and discuss lung function tests & their clinical significance	K	'KH <sub>1</sub>	Y	
PY6.8	Demonstrate the correct technique to perform & interpret Spirometry	S	SH	Ÿ	
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	S	р		
I <sup>3</sup> Y.6.10	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment		SH		

ouggested Teaching Learning method	Assessment method '	Number required to certify	Vertical Integration	Horizontal Integration	A.C 24.08.202 Appendix - 26
group discussion	Written/Viva				Page 513 of 527
Lecture, Small group discussion	Written/Viva voco				<del>-</del>
Lecture Small group discussion	Written/Viva				
Lecture Small Group discussion	Writter/Viva voce	100 Jan 1			
Lecture, Small group discussion	Written/Viva voce				
Lecture Small group discussion	Written/Viva voce				
group discussion	Written/Viva				
	Skill assessment/ Viva voce		Respiratory Medicine		
DOAP sessions	Skill assessment/ Viva voce/OSCE	1	e man custom		
DOAP sessions	Practical/OSPE/ Viva voce				
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				House Joseph Colored Control Colored Colored Colored Colored (Colored Colored	901- 201- 201-
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Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	A.C 24.08.202 Appendix - 26 Page 514 of 527
PY8,1	Describe the physiology of bone and calcium metabolism	K	КН	Y
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	КН	Y
PY8 3	Describe the physiology of Thymus & Pineal Gland	K	KH	Y
PY8.4	Describe function tests. Thyroid gland, Adrenal cortex, Adrenal medulla and pancreas.	К	KH	Y
PY8 5	Describe the metabolic and endocrine consequences of obesity & metabolic syndrome; Stress response. Outline the psychiatry component pertaining to metabolic syndrome.	. К	KH	Y
PY8.6	Describe & differentiate the mechanism of action of steroid, protein and amine hormones	К	KH	Y

Topic: Reproductive Physiology

Number of competencies: (12)

PY9 1	Describe and discuss sex determination, sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.	К	КН	Y
PY92	Describe and discuss puberty, onset, progression, stages, early and delayed puberty and outline adolescent clinical and psychological association.	К	KH	Y
PY93	Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness	К	KH	Y
PY9.4	Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes	К	КН	Y
PY9 5	Describe and discuss the physiological effects of sex hormones	. <b>K</b>	КН	Y
PY9.6	Enumerate the contraceptive methods for male and female Discuss their advantages & disadvantages	К	KH	Y
PY9.7	Describe and discuss the effects of removal of gonads on physiological functions	К	KH	Y
PY9,8	Describe and discuss the physiology of pregnancy, parturition & factation and outline the psychology and psychiatry-disorders associated with it	К	КН	Y

Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal Integration	A.C 24.08.202 Appendix - 26 Page 515 of 527
Lecture, Small group discussion	Written/Viva				
Lecture, Small group discussion	Written/Viva				
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ecture, Small group discussion					The second
Lecture, Small group discussion	Written/Viva voce			Biochemistry	
Lecture, Small group discussion	Written/Viva voce				
Lecture, Small group discussion	Written/Viva				
Lecture Small group discussion	Wotten:Viva voce			Human Anatomy	
Lecture, Small group discussion	Written/Viva voce				
Lecture, Small group discussion	Written/Viva voce				
Lecture, Small group discussion	Writlen/Viva voce				
ecture, Small Imup discussion	Written/Viva voce				
ecture, Small group discussion	Writlen/Viva voce		Obstetrics & Gynaecology, Community Medicine		Application of the Control of the Control
Lecture, Small- group discussion	Written/Viva		- ACCIONE		

Lecture, Small group discussion

Written/Viva

Obstetrics & Gynaecology

proper de la constante de la c	(b) sparm morphology and (c) sparm motility, as per WHO quidelines and discuss the results.  Discuss the physiological basis of			A.C 24.08.202 Appendix - 26 Page 516 of 527
PY9 10	various pregnancy tests	K K	KH	Yan in a second
PY 9 11	Discuss the hormonal changes and their effects during perimenopause and menopause	K	КН	Y
PY9 12	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.	K .	КН	Y
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	Lecture Small group discussion	Written/Viva	Obstetrics & Gynaecológy	A P
Sec. of Paris	Lecture, Small group discussion	Written/Viva voce	Obstetrics & Gynaecology	
	Lecture, Small group discussion	Written/Viva voce	Obstetrics & Gynaecology	ļ

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	The student should be able to	X/S/A/C	SH/P	A.C. 24.08 Appendix - Page 518	26
PY7 1	Describe structure and function of kidney	K	. кн	¥ ·	
PY7 2	Describe the structure and functions of juxta glomerular	iK	Kri	Y	
	apparatus and role of renin- angiotensin system				
PY7.3	Describe the mechanism of urine formation involving processes of filtration, lubular reabsorption & secretion; concentration and diluting mechanism	K	кн		
PY7.4	Describe & discuss the significance & implication of Renal glearance	K	КН	Y	
PY7 5	Describe the renal regulation of fluid and electrolytes & ac d-base balance	К	KH	Y .	
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	K	кн	<b>y</b>	4
PY7,7	Describe artificial kidney, dialysis and renal transplantation	. К	KH	Y	
PY7 8	Describe & discuss Renal Function	K	KH	1	
PY7.9	Describe cystometry and discuss the normal cystometrogram	К	КН	Y .	

Teaching Learning method	Assessment method	required to certify	Integration	norizontal Integration	A.C 24.08.2021 Appendix - 26
Lecture, Small group discussion	Written/Viva				Page 519 of 527
Lecture, Small group discussion	Written/Viva voce				
Lecture, Small group discussion	Written/Viva voce				
Lecture, Small group discussion	Written/Viva				
Lecture, Small group rescues on	Written/Viva Vaco				
Lecture, Small group discussion	Written/Viva voce				
Locture, Small group discussion	Written/Viva	1	General Medicine		
Lecture, Small group discussion	Written/Viva		Ta di mara	Biochemistry	
Lecture Small group discussion	Written/Viva				

No

	The student should be able to:	K/S/A/C	SHIP	A.C 24.0 Appendix Page 520	
				Page 520	01 327
PY10 1	Describe and discuss the organization of nervous system	К	KH	Y Y	
PY10,2	Describe and discuss the functions and properties of synapse reflex.	К .	KH	Y	
	receptors				
PY10.3	Describe and discuss somatic sensations & sensory tracts	К	KH	Y	
PY10 A	Describe and discuss motor tracts mechanism of mainterlance of tone, control of body movements posture and equilibrium &	K	KH	Y	
DV40.6	vestibular apparatus				4
PY10.5	Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)	K	КН	Y	
9.0fY9	Describe and discuss Spinal cord, its functions, lesion & sensory disturbances	К	K⊢	Y	
PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	К	KH:	Y	
PY10.8	Describe and discuss behavioural	K	KH	Y	<u> </u>
	and EEG characteristics during sleep and mechanism responsible for its production				
PY10.9	Describe and discuss the physiological basis of memory, learning and speech	К	КН	Y	
PY10 10	Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).	K	КН	Y	
PY10.11	Demonstrate the correct clinical examination of the nervous system; Higher functions, sensory system, motor system, reflexes, cranial nervos in a normal volunteer or simulated environmen	S	P	Y	

Jaggested Teaching Learning method	auggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration 24. A.C 24. Appendix	- <b>26</b>
Lecture, Small	Written/Viva			Page 521	of 527
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.ecture Small	Written/Viva		-	Human Anatomy	
roup discussion	voce			The second second	
ecture, Small	Written/Viva			115	4-1
roup discussion	voce .			Human Anatomy	
ecture, Small	Written/Viva	CHANGE TO SERVE	Carrie Sough was the	Human Anatomy	
roup discussion	voce				
ecture, Small	Written/Viva		g de Chechos, El casellos El case de la seguina de la companya	Wispan Appla	
roup discussion				Human Anatomy	
Lecture, Small	Written/Viva			Human Anatomy	
group discussion	Aace				
ecture, Small	111-11 - 0.11				
roup discussion	Written/Viva		Psychiatry	Human Analdmy	
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ecture Small	Written/Viva				
Oldupuiscussion			Psychiatry		
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ecture, Small	Written/Viva		Psychiatry	Se Cliston, amangarous process	
group discussion	voce				
Lecture, Small	Written/Viva			2.2	
group discussion	voce .				
				an special pre-mail.	
DOAP sessions	Skill	1 each		Human Anatomy	
	assassmenV	(total 5)		- Strices 75 diony	
	Viva voce/OSCE				
	COMPANY STATES				
				AN ARTHUR PROPERTY OF THE PARTY	GHT.
Small group	OSPENiva voce		Psychiatry		

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	The student should be able to	K/S/A/C	SHIP	Appendix - 26 Page 522 of 527
PY11.1	Describe and discuss mechanism of temperature regulation	К	кн	Y
PY11,2	Describe and discuss adaptation to altered temperature (heat and cold)	K	KH	Y
\$2×11 3	Describe and discuss mechanism of fever, cold injuries and heat stroke	K	КН	<u>Y</u>
PY15.4	Describe and discuss cardio- respiratory and metabolic adjustments during exercise physical training effects	К	KH	Ÿ
PY11:5	Describe, and discuss physiological consequences of sedentary lifestyle	К	КН	
PY11.6	Describe physiology of Infancy	K	Кн	N .
PY11.7	Describe and discuss physiology of aging, free indicals and antioxidants	К.	КН	N
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	L C
PY11.9	Interpret growth charts	К	· KH	N
PY11.10	Interpret anthropometric assessment of infants	К	КН	N
PY11.11	Discuss the concept, criteria for diagnosis of Brain death and its implications	К	KH	У
PY11.12	Discuss the physiological effects of meditation	, К	KH.	N
PY11.13	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	Y
PY11.14	Demonstrate Basic Life Support in a simulated environment	s s	SH	Y

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Teaching Learning method	Assessment method	required to certify	Integration	norizontal Integration	A.C 24.08.2021 Appendix - 26
Lecture, Small group discussion	Written/Viva				Page 523 of 527
Lecture. Small group discussion	Written/Viva				
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Lecture, Small group discussion	Written/Viva	₩ V			
Lecture, Small group discussion	Written/Viva				
Lecture, Small group discussion	Written/Viva		Pediatrics		
Lecture, Small group discussion	Written/Viva				
Lecture Small group discussion	Writlen/Viva voce				
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Small group teaching	Practical/OSPE/ Viva voce		Pediatrics		
Small group teaching	Practical/OSPE/ Viva voce		Pediatrics		
Lecture, Small group discussion.	Written/Vtva voce				
Lecture, Small group discussion DOAP sessions					
2001 323510115	Skill assessment/ Viva voce				
DOAP sessions	OSCE .		General Medicine, Anaesthesiology	,	

reumaer H	The student should be able to:	Domain  K/S/A/C	Level K/KH/ SH/P	Appendix - 26 Page 524 of 52
PY10.13	Describe and discuss perception of smell and taste sensation	K	KH	Y
PY10 14	Describe and discuss patho- physiology of altered sn-ell and taste sensation	Κ. "	кн	Y
PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	K	КН	/ V
PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests	K	КН	Y
PY10 17' .	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, rotractive errors colour blindness, physiology of pupil and light reflex	K	КН	
PY10.18 '	Describe and discuss the physiological basis of lesion in visual pathway	K	КН	Y
PY10.19	Describe and discuss auditory & visual cycke potentials	K.	KH	Y
PY10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) heading (iii) Testing for smell and (iv) laste sensation in	S	P	Y



Teaching Learning nethod	Assessment method	required to certify P	Vertical Integration	Horizontal Integration A.C 24.08.2  Appendix - 26
Lecture, Small group discussion	Written/Viva		ENT	Page 525 of 5
recture, Small proup discussion	.Written/Viva vace		ENT	
ecture. Small group discuss on	Written/Viva voce		ENT	
octure Small inoup discussion	Written/Viva voce		ENT	
ecture, Small group discussion	Written/Viva / vocit		Ophthalmology	
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ecture Small froup discussion	Writen/Viva		Ophthalmology	
ecture Small group discussion	Written/Viva		Ophthalmology	
OOAP sessions	Skill assessment/ Viva voce	1 each (lotal 4)	ENT, Ophthalmology	

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Númber	CENTERION	Control of the contro		Appendix -	
nomber	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Page 526 o	f 527
PY4.1	Describe the structure and functions of digestive system	K	К-	Y	
PY4.2	Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	К	KH	·	
PY4.3	Describe GIT movements, regulation and functions. Describe defecation reflex Explain role of dietary fibre	K .	кн	<b>Y</b>	
PY4,4	Describe the physiology of digestion and absorption of nutrients	К	· KH	Y	
PY4.5	Describe the source of GIT hormones, their regulation and functions	K	KH	Y	
PY4.6	Describe the Gut-Brain Axis	K	KH, P	Y	
PY4.7	Describe & discuss the structure and functions of liver and gall bladder	. K	КН	Y .	
PY4.8	Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests	К	КН	Y	
PY4 9	Discuss the physiology aspects of peptic ultion, gastro- describageal reflux disease, verniting, diarrhoed, constitution, Adynamic ileus, Hirschsprung's disease	К	КН		
PY4.10	Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment	Š	SH	Y	



Suggested Teaching Learning method	Suggested Assessment method	Number required to certify	Vertical Integration	Horizontal · Integration
Lecture, Small group discussion				Human Anatomy
Lecture, Small group discussion	Written/V∗va voce			Biochemistry
Lecture, Small group discussion	Written/Viva vace			
Lecture, Small group discussion	Written/Viva voce			Brochemistry
Lecture, Small group discussion	Written/Viva voce			
Lecture, Small group discussion	Written/Viva	100 mg		
Lecture, Small group discussion	Written/Viva voce			Biochemistry
Lecture, Small group discussion. Demonstration Esopriageal Manumetry & Endoscopy	Written/Viva voce			Biochemistry
Lecture, Small group discussion	Written/Viva		General Medicine	Biochemistry
DOAP session	Skill assussment/ Viva voce/OSCE			

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