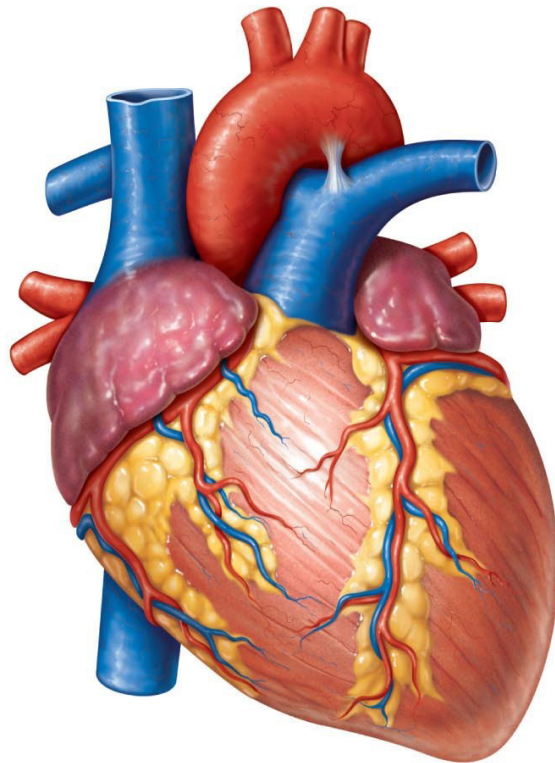




RIHS MEDICAL & DENTAL COLLEGE INTEGRATED CURRICULUM



CARDIOVASCULAR MODULE

10305 SESSION 2022-23

FIRST YEAR MBBS

STUDY GUIDE

PREPARED BY: PROF. SABIHA M HAQ

RIHS Medical & Dental College, 2023 yearly Calendar

First year batch 2022-23													
Block I 13 weeks including Eidul Fitr 21-25 April			Block II 11 weeks plus 4 weeks for summer break & Eidul Adha						Block III 11 weeks			University Assessments	
13 th Feb. to 26 th March.	27 th March to 7 th May	8 th May to 14 th May	15 th May to 11 th June	12 th June to 27 th June	28 th June to 30 th July Eidul Adha	31 st July to 20 th August	21 st August to 27 th August	28 th August to 8 th October	9 th October to 5 th November	6 th November to 12 th November	13 th November till annual exams	December 2023	
Orientation & Foundation Module 10101	Musculo-skeletal I Module 10102	Block I Revision & Assessment	Hematology, Immunology Module 10203	Musculo-skeletal II Module 10204	Summer break including Eidul Adha	Musculo skeletal II Module 10204	Block II Revision & Assessment	Cardio-Vascular Module 10305	Respiratory Module 10306	Block III Revision & Assessment	Resit and Pre-Exam leave	Written & Practical Assessment	
06 weeks	06 week	01week	04 weeks	03 weeks	04 weeks	03 weeks	01 week	6 weeks	04 weeks	01 week	04 weeks	03 weeks	
<p>*Each Module consists of integrated teaching of normal structure and function of the human body and their clinical context. In order to help the students, acquire knowledge, skills and professional behavior, special focus is placed on involving multiple teaching and learning strategies and Assessment modalities.</p> <p>**Islamic studies is taught as one LGIS per week throughout all Modules</p> <p>***Communication skills, Medical Ethics, Professionalism & Behavioral Sciences are taught in the relevant Modules as parallel subjects</p> <p>****There is continuous Assessment throughout the Modules by relevant disciplines, in addition to end Block Assessment</p>													

PROF. DR. SABIHA M HAQ
 HEAD OF ANATOMY
 RIHS MEDICAL & DENTAL COLLEGE

PROF. DR. SHAKAIB ANWAR
 PRINCIPAL
 RIHS MEDICAL & DENTAL COLLEGE

Module 10305: CARDIOVASCULAR MODULE

Session 2022-23

**Placement in curriculum: Module code:
10305 (Year 1, block- 03, module 05) Pre-
requisite: Block I and II modules**

Teaching faculty & Curriculum committee members

	Disciplines	Name of Faculty
1.	Principal & HOD Surgery	Prof. Dr. Shakaib Anwar
2.	Anatomy	Prof. Dr. Sabiha M. Haq
3.	Physiology	Prof. Dr. Jan Alam
4.	Biochemistry	Prof. Dr. Rehan Khwaja
5.	Pathology	Prof. Dr. Bushra
6.	Pharmacology	Prof. Dr. Azam Zia
7.	Community Medicine	Prof. Dr. Mirza Inamul Haq
8.	Forensic Medicine	Dr. Sabika Husain
9.	Behavioral Sciences	Ms. Nargis Munir
10.	Medical & Allied	Prof. Dr. Nadia Shams
11.	Surgery & Allied	Prof. Dr. Shaukat
Module duration		06 Weeks
Module planner		Prof. Dr. Sabiha M Haq

Module Coordinator	
Integrated Curriculum	<p>The Integrated Curriculum is becoming an increasingly popular concept internationally, in the field of Medicine.</p> <p>The goal of integration is to break down barriers between the basic and clinical sciences, currently in practice as a result of traditional curricular models.</p> <p>Integration should promote retention of knowledge and acquisition of skills through repetitive and progressive development of concepts and their applications.</p> <p>There are three areas in need of improvement and clarification for successful integration:</p> <ol style="list-style-type: none"> 1. Ensuring synchronous presentation of material 2. Avoiding the tendency to diminish the importance of the basic sciences, and 3. Using unified definitions <p>(MEDICAL TEACHER)</p> <p>The model adapted in this institution is an Integrated, modular, system based, spiral curriculum</p> <p>First spiral is for two years & second spiral is spread over three years.</p>
Students as a curriculum coordinator and Class Representative	<p>Student involvement in an integrated curriculum is the key to the process of making him a self-directed, competent and ethical learner who can adjust and compete with the latest trends in medical education in today's and tomorrow's world.</p> <p>In order to achieve this:</p> <ol style="list-style-type: none"> 1. Students will help the Module coordinators in accomplishing all tasks assigned to him/her. 2. They will be a part of curriculum planning and implementing team. 3. They will inform/discuss the ongoing activities /problems in teaching and learning with module coordinators and curriculum chairperson.
Module Rationale:	<p>The main role of the cardiovascular system in the body is to transport oxygen to all tissues in the body and for removing, from these same tissues, metabolic waste products. The system itself consists of the blood, the medium for exchanging oxygen, nutrients and waste products throughout the body, the blood vessels, the pipes through which the blood flows and the heart, the pump which forces blood to flow through the blood vessels.</p> <p>Cardiovascular health is important in maintaining overall health and wellness. This module will teach how heart and</p>

	cardiovascular system work when healthy, and what happens when diseased. We will explore through lectures, SGDs and skill lab normal anatomy, physiology, biochemistry of CVS.
Module Outcomes	<p>By the end of the module the student should be able to:</p> <ul style="list-style-type: none"> • Explain the structural & developmental organization of CVS • Understand the physiology of conductive system of heart, cardiac cycle • Explain different waves, segment and intervals of ECG and apply it to the interpretation of ECG • Must understand the pathophysiology of edema, infarction, shock and thrombosis • Demonstrate effective communication skill strategies while history taking and examining the patients with CVS problems
Teaching & Learning methodology	<p>Large Group Interactive Sessions (LGIS): The goal of interactive lecture is to engage the students' attention, through ways to interact with the content, the instructor, and their classmates. Accordingly, interactive lectures include segments of knowledge transfer combined with segments where students interact. One of the things that make the lecture interactive is the ability of the instructor to select the content of the lecture segments based on the students' needs. This demands a prior search for the baseline knowledge of the students at the start of the lecture. If students have difficulty answering a question, or an activity fails to develop the concept in most student groups, it's time to find a new and better way to deal with the material. LGIS clearly gives a better concept of the content and keeps students' attention captured throughout, as compared to yester years' didactic lectures.</p> <p>Small Group Discussion (SGD): 'The purpose and technique of small group teaching is that it is learner-centred, with all students joining in free discussion on a particular topic. A typical 'small group' is around eight to 12 learners facilitated by a teacher. The steps of SGD are Forming, Storming, Norming & Performing. The teacher acts only as a facilitator. Students are allowed to use their books or other search material during the discussion. SGD is a good method to clear the concepts and develop communication and conflict solving skills in the students.</p> <p>Departmental teaching labs: This is performance based</p>

	<p>teaching & learning methodology where students learn handling and uses of laboratory equipment and models, safety rules and various clinical skills.</p> <p>Dissection: Where necessary teaching of gross Anatomy is aided by cadaver dissection and model demonstration.</p> <p>Problem based/ Task based/ Case based learning (PBL/TBL/CBL): Students are presented with real life problems/tasks/cases. They are motivated through a standard process to seek answers to the given problem, task or case. This is a highly effective method to capture and maintain students' interest in patients' problems and their solution.</p> <p>Assignments and Presentations: Both of these methodologies are meant to make the students self-directed learners and good communicators by seeking knowledge from multiple sources and presenting it.</p>
<p>Assessment methodology:</p>	<p>MCQs, Viva, and OSPE /OSCE</p>

	Topic	Discipline	Learning objectives	Learning Strategy	Assessment Methodology
1.	Circulatory system overview	Anatomy	<ul style="list-style-type: none"> • Enlist the components of cardiovascular system • Give an overview of the system 	1 LGIS	MCQ
2.	Gross Anatomy of Heart I	Anatomy	<ul style="list-style-type: none"> • Describe the position, shape & relations of heart and its chambers 	1 SGD	MCQ
3.	Gross Anatomy of Heart II	Anatomy	<ul style="list-style-type: none"> • Describe internal features of atria and ventricles of heart • Comment on the role of muscle bundles present in the ventricles in Drawing the valve cusps together during ventricular systole • Explain how the skeleton of heart prevents the incompetence of heart valves • Describe the structure of interatrial and interventricular septum • Identify the developmental differences present in right atrium 	1 SGD	MCQ
4.	Pericardium	Anatomy	<ul style="list-style-type: none"> • Describe the gross features of fibrous pericardium • Describe the gross features of serous pericardium • Identify the location and the attachments of transverse pericardial sinus • Identify the location and attachments of the oblique pericardial sinus • Comment on the Surgical Significance of the Transverse Pericardial Sinus • Define Pericarditis • Define Pericardial Effusion 	1 SGD	MCQ
5.	Blood Supply & Venous Drainage of Heart	Anatomy	<ul style="list-style-type: none"> • Enumerate the arteries which supply blood to the heart • Describe the branches of coronary arteries in relation their area of supply • Describe the blood supply of heart with reference to right and left dominance • Describe the venous Drainage of heart 	1 SGD	MCQ

			<ul style="list-style-type: none"> • Describe heart's innervation • Define Myocardial Infarction 		
6.	Overview of circulation	Physiology	<ul style="list-style-type: none"> • Describe the physiology of cardiac muscle. • Explain how action potentials are generated in cardiac muscle. • Describe the excitation contraction coupling mechanism. • Enlist the steps of the cardiac cycle. • Explain the functions of ventricles as pumps. • Explain the aortic pressure curve. • Describe the volume pressure diagram of the cardiac cycle. • Describe the regulation of heart pumping. • Explain the effect of the following on heart function: <ul style="list-style-type: none"> ○ Potassium. ○ Calcium. <p>Temperature.</p>	4 LGIS	MCQ
7.	Lipid classification and function	Biochemistry	<ul style="list-style-type: none"> • Define lipids • Understand different classes of lipids • Comment on their biochemical importance 	1 LGIS	MCQ
8.	Nerves and large vessels in the thorax	Anatomy	<ul style="list-style-type: none"> • Define thoracic inlet and outlet • Describe the parts, course and branches of thoracic aorta • Describe the course and branches of pulmonary trunk • Discuss the formation of brachiocephalic and superior vena cava in the thorax • Point out the course of vagus nerve in the thorax • Recognize the role of vagus nerve in the formation of esophageal, cardiac and pulmonary plexuses 	1 SGD	MCQ
9.	Rhythmical excitation of the heart	Physiology	<ul style="list-style-type: none"> • Enumerate the parts of the conductive system of the heart. • Explain the spread of cardiac impulse through the heart. • Describe the role of the pace maker of the heart. <p>Explain the role of the sympathetic and parasympathetic supply to the</p>	2 LGIS	MCQ

			heart.		
10.	Surface marking	Anatomy	<ul style="list-style-type: none"> Mark the following on the given subject Heart outline Heart valves Major thoracic vessels 	Skill lab	OSPE/VIVA
11.	Phospholipids, structure & function	Biochemistry	<ul style="list-style-type: none"> Discuss important phospholipids Describe their functions in the body 		
12.	Development of heart –1	Anatomy	<ul style="list-style-type: none"> Describe the formation of heart tube Describe the mechanism of cardiac looping Describe contribution of bulbus cordis and sinus venosus to the development of heart Enlist abnormalities of cardiac looping 	1 LGIS	MCQ
13.	Enzyme classification	Biochemistry	<ul style="list-style-type: none"> Define enzymes and their chemical nature Classify enzymes with appropriate examples 	1 LGIS	MCQ
14.	Development of heart – 2	Anatomy	<ul style="list-style-type: none"> Describe the formation of atria and ventricles with special reference to septum Primum and septum Secundum Describe atrial septal defects 	1 LGIS	MCQ
15.	Development of aortic arches	Anatomy	<ul style="list-style-type: none"> Describe the development of aortic arches Enumerate their derivatives Comment on coarctation of aorta 	1 LGIS	MCQ
16.	Glycolipids and sphingolipids	Biochemistry	<ul style="list-style-type: none"> Define glycolipids and describe their role in nerve transmission Define sphingolipids and their role in nervous system 	1 LGIS	MCQ
17.	Development of venous system	Anatomy	<ul style="list-style-type: none"> Describe the development of venous system Comment on: <ul style="list-style-type: none"> double inferior vena cava double superior vena cava 	1 LGIS	MCQ
18.	General Anatomy of Blood Vessels	Anatomy	<ul style="list-style-type: none"> Classify blood vessels according to <ul style="list-style-type: none"> Size Shape Histology Describe each type giving examples Enumerate the types of 	1 LGIS	MCQ

			<p>capillaries quoting examples of each</p> <ul style="list-style-type: none"> • Explain the importance of collateral circulation in diseases • Describe histological changes in intima in atherosclerosis and arteriosclerosis • Differentiate between anatomic end arteries and functional end arteries giving examples 		
19.	Histology of blood vessels I	Anatomy	<ul style="list-style-type: none"> • Classify blood vessels • Describe the basic histological structure of blood vessels 	1 LGIS	MCQ
20.	Histology of blood vessels II	Anatomy	<ul style="list-style-type: none"> • Compare the histology of veins and arteries • Relate their histology to the function 	1 LGIS	MCQ
21.	Fatty acid classification & functions	Biochemistry	<ul style="list-style-type: none"> • Classify fatty acids on the basis of their physical and chemical properties • Comment on their biochemical role in the body 	1 LGIS	MCQ
22.	Sulphur test	Biochemistry	<ul style="list-style-type: none"> • Detect the presence of sulphur containing amino acid, Cystine in the given sample 	1 LGIS	MCQ
23.	Development of heart – 3	Anatomy	<ul style="list-style-type: none"> • Describe the formation of ventricles • Describe ventricular septal defects • Describe Fallot's tetralogy 	1 LGIS	MCQ
24.	Rheumatic Heart Disease	Community Medicine	<ul style="list-style-type: none"> • Define Rheumatic Heart Disease • Discuss Disease Burden of Rheumatic Heart Disease • Describe risk factors of Rheumatic Heart Disease • Enumerate epidemiological factors of Rheumatic Heart Disease • Discuss Agent, host and Environment factors of Rheumatic Heart Disease • Briefly describe clinical features of Rheumatic Heart Disease • Discuss in detail Prevention and Control measures for Rheumatic Heart Disease 	1 LGIS	MCQ
25.	The normal electrocardiogram	Physiology	<ul style="list-style-type: none"> • Describe the characteristics of the normal electrocardiogram. 	2 LGIS	MCQ

			<ul style="list-style-type: none"> • Explain the flow of current around the heart during the cardiac cycle. • Describe the Einthoven's triangle. • Explain the function of the: <ul style="list-style-type: none"> ○ Bipolar leads. ○ Unipolar leads. • Chest leads. 		
26.	Radial pulse	Physiology	<ul style="list-style-type: none"> • Examine the radial pulse of the given subject 	Skill Lab	OSPE/VIVA
27.	Histology of blood vessels	Anatomy	<ul style="list-style-type: none"> • Identify the histological features of arteries and veins under microscope • Draw and label the histology of blood vessels and give their identification points 	Skill Lab	OSPE/VIVA
28.	Placenta & multiple pregnancy	Anatomy	<ul style="list-style-type: none"> • Describe the structure and functions of placenta • Describe the mechanism of fetal circulation • Enumerate placental anomalies • Comment on the clinical effects of placental anomalies • Classify multiple pregnancies 	1 LGIS	MCQ
29.	Fetal circulation	Anatomy	<p>Describe the following:</p> <ul style="list-style-type: none"> • Fetal circulatory changes at birth • Closure of the umbilical vein and ductus venosus • Closure of the ductus arteriosus • Closure of the oval foramen • Comment on patent ductus arteriosus • Comment on patent foramen Ovale 	1 LGIS	MCQ
30.	ECG interpretation and vectoral analysis	Physiology	<ul style="list-style-type: none"> • Describe the use of vectors to represent electrical potential. • Explain how the direction of a vector is denoted in terms of degrees. • Describe the mean electrical axis of the ventricular QRS and its significance. • Describe the conditions that cause abnormal voltages of the QRS complex. • Explain current of injury. <ol style="list-style-type: none"> 1. Explain the abnormalities of 	3 LGIS	MCQ

			the T wave.		
31.	Cardiac arrhythmias and their electrographic interpretation	Physiology	<ul style="list-style-type: none"> • Explain the following abnormal sinus rhythms: <ul style="list-style-type: none"> ○ Tachycardia. ○ Bradycardia. ○ Sinus arrhythmia. • Describe the abnormal rhythms that result from blocks of the heart signals within the intracardiac conduction pathways. • Enlist the causes of premature contractions. • Explain the following abnormalities: <ul style="list-style-type: none"> ○ Paroxysmal tachycardia. ○ Ventricular fibrillation. ○ Atrial fibrillation. ○ Atrial flutter. • Cardiac arrest. 	3 LGIS	MCQ
32.	Overview of circulation	Physiology	<ul style="list-style-type: none"> • Describe the physical characteristics of circulation. • Enlist the basic principles of circulatory function. • Explain the types of blood flow. 	1 LGIS	MCQ
33.	Precipitation of proteins	Biochemistry	<ul style="list-style-type: none"> • Separate proteins in a given sample using precipitation by salting out method 	1 LGIS	MCQ
34.	Vascular distensibility and functions of the arterial and nervous system	Physiology	<ul style="list-style-type: none"> • Define vascular distensibility. • Describe the various arterial pressure pulsations. • Explain the functions of veins. • Enumerate the specific blood reservoirs. 	1 LGIS	MCQ
35.	Development of arterial system	Anatomy	<ul style="list-style-type: none"> • Describe the development of arterial system of heart • Comment on the anomalies of arterial system 	1 LGIS	MCQ
36.	Jugular venous pressure	Physiology	<ul style="list-style-type: none"> • Define JVP. • Perform the steps of determining JVP on a given subject. 	Skill Lab	OSPE/VIVA
37.	Conducting system of heart	Physiology	<ul style="list-style-type: none"> • Describe the transmission of cardiac impulse from atria to ventricles with reference to A V nodal delay • Discuss the mechanism of rapid 	1 LGIS	MCQ

			transmission of cardiac impulse through ventricular Purkinje system		
38.	Mechanism of action of enzymes	Biochemistry	<ul style="list-style-type: none"> Describe the phenomena of key lock model And Induce fit model Understand the terms energy of activation and transition state 	1 LGIS	MCQ
39.	Factors affecting the enzyme activity	Biochemistry	<ul style="list-style-type: none"> Understand and explain different factors affecting the enzymes activity Correlate the importance of varying pH and the action of enzyme in the process 	1 LGIS	MCQ
40.	Anomalies of heart	Paediatric surgery	<ul style="list-style-type: none"> Enumerate the congenital anomalies of heart Define each anomaly Comment on the signs and symptoms resulting from these anomalies 	1 LGIS	MCQ
41.	Paper chromatography	Biochemistry	<ul style="list-style-type: none"> Separate and identify two amino acids using ascending paper chromatography 	LGIS	MCQ
42.	PBL: CHEST PAIN				
43.	ECG	Physiology	<ul style="list-style-type: none"> Perform the steps of placing ECG leads on the given subject 	Skill lab	OSPE/VIVA
44.	Heart sounds	Physiology	<ul style="list-style-type: none"> Identify areas and perform the steps of auscultation of normal heart sounds on the given subject 	Skill lab	OSPE/VIVA
45.	Apex beat	Physiology	<ul style="list-style-type: none"> Perform the steps of determining apex beat of the given subject 	Skill Lab	OSPE/VIVA
46.	Eicosanoids structure and function	Biochemistry	<ul style="list-style-type: none"> Describe the structure and formation of eicosanoids Comment on their biochemical role in the body 	1 LGIS	MCQ
47.	Imaging of CVS	Anatomy	<ul style="list-style-type: none"> Identify heart and vessels on normal chest radiographs Identify the coronaries on coronary angiograph 	Skill lab	OSPE/VIVA
48.	Heat coagulation test	Biochemistry	<ul style="list-style-type: none"> Detect the presence of protein in a given solution by heat coagulation 	LGIS	MCQ

49.	Microcirculation and lymphatic system	Physiology	<ul style="list-style-type: none"> • Explain the structure of the microcirculation. • Describe the exchange of substances between the blood and interstitial fluid. • Describe the difference between the interstitium and interstitial fluid. • Describe the fluid filtration across capillaries. Explain the function of the lymphatic system in relation to its structure. 	2 LGIS	MCQ
50.	Essential fatty acids	Biochemistry	<ul style="list-style-type: none"> • Describe the importance of essential fatty acids • Explain their biochemical role in tissues and cells 	1 LGIS	MCQ
51.	Blood pressure	Physiology	<ul style="list-style-type: none"> • Recall what is blood pressure. • Determine the blood pressure of a given subject. 	1 LGIS	MCQ
52.	Local and humoral control of tissue blood flow	Physiology	<ul style="list-style-type: none"> • Enlist the mechanisms of blood flow control. • Explain each mechanism of blood flow control. • Describe the humoral control of circulation in regards to: <ul style="list-style-type: none"> ○ Vasoconstrictor agents. ○ Vasodilator agents. • Ions and other chemical factors. 	2 LGIS	MCQ
53.	Eicosanoids in health in disease	Biochemistry	<ul style="list-style-type: none"> • Describe the role of eicosanoids in health • Describe the importance of eicosanoid blockage in disease 	1 LGIS	MCQ
54.	Isoenzymes and clinical importance	Biochemistry	<ul style="list-style-type: none"> • Define isoenzymes and quote example of each • Discuss the role of isoenzymes LDH and CPK in the diagnosis of MI 	1 LGIS	MCQ
55.	Rapid control of arterial pressure	Physiology	<ul style="list-style-type: none"> • Describe the nervous regulation of the circulation. • Describe the special features of nervous control of arterial pressure. • Explain the rapid control of 	2 LGIS	MCQ

			arterial pressure.		
56.	Role of the kidneys in long term control of arterial pressure and in hypertension	Physiology	<ul style="list-style-type: none"> Describe the renal blood flow system for arterial pressure control. Describe the function of the renin angiotensin system in controlling arterial pressure. Explain how impaired renal function can lead to chronic hypertension. Describe the types of hypertension. 	2 LGIS	MCQ
57.	Identification of fats and oils	Biochemistry	<ul style="list-style-type: none"> Describe different chemical reactions fats go through Appreciate the importance of fat identification 	1 LGIS	MCQ
58.	Hypertension	Community Medicine	<ul style="list-style-type: none"> Define Hypertension Discuss Disease Burden of Hypertension Describe risk factors of Hypertension Discuss population strategy of primary prevention - Hypertension Discuss High Risk strategy of primary prevention – Hypertension Discuss Secondary prevention – Hypertension Discuss Tertiary prevention - Hypertension 	1 LGIS	MCQ
59.	Introduction to antihypertensives	Pharmacology	<ul style="list-style-type: none"> Classify antihypertensives Explain how different Drugs decrease blood pressure Enumerate Drugs in hypertensive emergencies 	1 LGIS	MCQ
60.	Emulsification	Biochemistry	<ul style="list-style-type: none"> Demonstrate the emulsification of natural fats in water by sodium carbonate, bile salts and soaps 	Skill lab	OSPE/VIVA
61.	PBL: CARDIAC ASTHMA				
62.	Edema	Pathology	<ul style="list-style-type: none"> Define edema Classify edema Discuss pathophysiology of edema with clinical correlation 	1 LGIS	MCQ

63.	Cortical Hormones (steroids) & their biochemical role	Biochemistry	<ul style="list-style-type: none"> Name mineral corticoids and glucocorticoids (cortical hormones) Explain their clinical importance 	1 LGIS	MCQ
64.	Cholesterol structure and function	Biochemistry	<ul style="list-style-type: none"> Describe the structure of cholesterol Describe the functions of cholesterol and its importance in the formation of steroids 	1 LGIS	MCQ
65.	Cardiac output, venous return and their regulation	Physiology	<ul style="list-style-type: none"> Explain the control of cardiac output by venous return. Describe the role of the nervous system in controlling cardiac output. Enumerate the methods for measuring cardiac output. Describe the analysis of cardiac output through: <ul style="list-style-type: none"> Cardiac output curves. Venous return curves. 	2 LGIS	MCQ
66.	Factors affecting enzyme activity	Biochemistry	<ul style="list-style-type: none"> Explain how different factors affect enzyme activity Correlate the importance of varying pH on enzyme action 	1LGIS	MCQ
67.	Muscle blood flow and cardiac output during exercise; the coronary circulation and ischemic heart disease	Physiology	<ul style="list-style-type: none"> Recall how blood flow is regulated in skeletal muscles at rest and during exercise. Describe the circulatory readjustments during exercise. Describe the physiological anatomy of coronary blood supply. Explain ischemic heart disease. Enlist the causes of death after acute coronary occlusion. Describe ways for treating coronary heart disease. 	3 LGIS	MCQ
68.	Coenzymes, cofactors	Biochemistry	<ul style="list-style-type: none"> Define coenzymes and cofactors Explain the phenomenon of 	LGIS	MCQ

			enzyme inhibition and its clinical importance		
69.	Cardiac failure	Physiology	<ul style="list-style-type: none"> Describe the circulatory dynamics in cardiac failure. Describe cardiogenic shock. Explain how edema occurs in patients with cardiac failure. Define cardiac reserve. Describe cardiac failure via a graphical analysis. 	2 LGIS	MCQ
70.	Heart valves and heart sounds; Valvular and congenital heart defects	Physiology	<ul style="list-style-type: none"> Describe normal and abnormal heart sounds. Explain the dynamics of circulation in stenosis and regurgitation. Briefly describe the pathophysiology related to the following congenital heart diseases: <ul style="list-style-type: none"> Patent ductus arteriosus. Tetralogy of fallot. 	2 LGIS	MCQ
71.	Thromboembolism	Pathology	<ul style="list-style-type: none"> Describe very briefly thrombus development related to Virchow's triad List five conditions that predispose an individual to thrombi Describe the morphology of thrombus and explain mural thrombi Describe very briefly the fate of thrombi with special emphasis on their organization, recanalization, and embolization Define emboli and give five clinically important examples Describe very briefly pulmonary & systemic embolism 	1 LGIS	MCQ
72.	Stroke	Community Medicine	<ul style="list-style-type: none"> Define stroke Discuss Disease Burden of stroke Describe risk factors of 	1 LGIS	MCQ

			<p>stroke</p> <ul style="list-style-type: none"> • Discuss epidemiological factors related to stroke • Define TIA • Discuss stroke control measures 		
73.	Circulatory shock and its treatment	Physiology	<ul style="list-style-type: none"> • Define shock. • Enumerate the physical causes of shock. • Describe the following types of shock: <ul style="list-style-type: none"> ○ Hypovolemic shock. ○ Neurogenic shock. ○ Anaphylactic shock. ○ Septic shock. • Describe the treatment for shock. 	2 LGIS	MCQ
74.	Cardiac Enzymes	Biochemistry	<ul style="list-style-type: none"> • Define isoenzymes • Explain the role of isoenzymes of LDH and CK in the diagnosis of MI • discuss the pattern of release of cardiac enzymes during IHD • Explain the cardiac markers of ischemia 	1 LGIS	MCQ
75.	Atherosclerosis	Pathology	<ul style="list-style-type: none"> • Describe briefly an atheroma and its contents • Enlist common risk factors for atherosclerosis • Explain how thrombosis plays a major role in the pathogenesis of atherosclerosis • Enlist few common complications of atherosclerosis 	1 LGIS followed by 1 SGD	MCQ
76.	Hypercholesterolemia	Biochemistry	<ul style="list-style-type: none"> • Understand the role of lipids in the development of atherosclerosis • Explain the biochemical basis of coronary heart disease 	1 LGIS	MCQ
77.	Myocardial infarction	Pathology	<ul style="list-style-type: none"> • Define infarction and explain its pathogenesis • Describe the etiology of red 	1 LGIS	MCQ

			<p>and white infarct</p> <ul style="list-style-type: none"> List few factors that influence infarct development Describe the typical lesion of Myocardial infarction Enlist few common symptoms and complications of the disease 		
78.	Lipid peroxidation	Biochemistry	<ul style="list-style-type: none"> Explain the concept of lipid peroxidation Comment on the role of oxidants and antioxidants on lipid peroxidation 	1 LGIS	MCQ
79.	Clinical enzymology	Biochemistry	<ul style="list-style-type: none"> Understand the importance of enzyme levels in blood in clinical diagnosis Comment on their importance in in prognosis and treatment plans in various stages of disease 	1 LGIS	MCQ
80.	Coronary Heart Disease	Community medicine	<ul style="list-style-type: none"> Give a brief introduction of Cardiovascular diseases Define Coronary Heart Disease(CHD) Discuss Disease Burden of CHD Describe risk factors of CHD Discuss population strategy of primary prevention - CHD Discuss High Risk strategy of primary prevention – CHD Discuss Secondary prevention – CHD 	1 LGIS	MCQ
81.	Introduction to Drugs used in CCF	Pharmacology	<ul style="list-style-type: none"> Classify Drugs used in CCF Explain how digoxin decreases heart rate Enumerate therapeutic effects of Drugs used in CCF Enumerate adverse effects of Drugs used in CCF 	1 LGIS	MCQ

82.	Health Education	Community Medicine	<ul style="list-style-type: none"> • Define Health Education • Discuss Concept and aim of Health Education • Describe various approaches to Health Education • Discuss models of Health Education • Classify various Immunizing Agents • What are contents of Health Education • Discuss practice and methods of Health Education 	1 LGIS	MCQ
83.	Introduction to vasodilators	Pharmacology	<ul style="list-style-type: none"> • Enumerate directly acting vasodilators • Give mechanism of action of different Drugs • Enumerate therapeutic of different Drugs • Enumerate adverse effects of different Drugs 	1 LGIS	MCQ

Learning Resources:

Anatomy

Text Books

1. Regional Anatomy by Snell
2. Embryology by Langman's
3. Snell's Neuro Anatomy
4. Histology by Janquira
5. General Anatomy by Laique Hussain

Reference Books:

6. Clinical Anatomy by Keith L Moore
7. Histology by Laique Hussain
8. Histology by Difiore
9. Student Gray's
10. Embryology by Keith L Moore

Physiology

11. Text Book of Medical Physiology by Guyton & Hall
12. Physiology by Lippincott

Biochemistry

13. Lippincott Biochemistry
14. Harper's Biochemistry
15. Mushtaq Biochemistry

Pathology

16. Pathologic Basis of Disease by Robbins and Cotran

Pharmacology

17. Lippincott pharmacology
18. Katzung Pharmacology Biochemistry

Behavioral Sciences

19. Introduction to Psychology by Edward E Smith
20. Behavioral Science by Lippincott Williams

Community Medicine

21. Text book of Preventive and Social Medicine by JE Park

Medicine

22. Davidson's Text book of Medicine

Surgery

23. Text book of Surgery by Bailey & Love
24. Text book of Radiology by Christson



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