Name: Enrolment No:	

UPES

End Semester Examination, December 2024

Course: Pharmacotherapeutics 1 **Semester : 5**

Program: Int. BMSc. (Clinical Research) **Duration : 3 Hours**

Course Code: HSCR3011 **Max. Marks: 100**

Instructions: Read questions carefully

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	Cos
Q 1	Homeostasis is best described as…..	**1.5**	**CO1**
Q 2	The cellular injury due to membrane damage primarily results in: a) Impaired protein synthesis b) Intracellular accumulation of lipids c) Release of intracellular enzymes d) Both b and c	**1.5**	**CO1**
Q 3	Which of the following is an example of a reversible cellular adaptation? a) Necrosis b) Atrophy c) Hypertrophy d) Both b and c	**1.5**	**CO1**
Q 4	Mitochondrial damage in cells primarily leads to: a) Increased protein synthesis b) Loss of ATP production c) Increased cell division d) Enhanced cell repair mechanisms	**1.5**	**CO1**
Q 5	The process by which the body responds to tissue injury and infection is called: a) Inflammation b) Repair c) Necrosis d) Apoptosis	**1.5**	**CO1**
Q 6	Which of the following is a cardinal sign of inflammation? a) Pallor b) Swelling c) Hyperglycemia d) Vasodilation	**1.5**	**CO2**
Q 7	Which of the following is a mediator of inflammation? a) Platelets b) Histamine	**1.5**	**CO2**

	c) Acetylcholine d) Insulin		
Q 8	Which cell type is primarily responsible for the migration to the site of injury during inflammation? a) Neutrophils b) Erythrocytes c) T-cells d) Basophils	**1.5**	**CO2**
Q 9	Wound healing in the skin typically progresses through which of the following phases? a) Exudation, proliferation, and maturation b) Hemostasis, inflammation, and resolution c) Proliferation, differentiation, and resolution d) Hemostasis, inflammation, proliferation	**1.5**	**CO2**
Q 10	Which type of anemia is characterized by a deficiency of vitamin B12 or folic acid?	**1.5**	**CO3**
Q 11	The primary pathophysiological change in sickle cell anemia is: a) Erythrocyte hemolysis b) Abnormal hemoglobin leading to cell sickling c) Reduced platelet count d) Defective red blood cell synthesis	**1.5**	**CO3**
Q 12	Jaundice is primarily caused by: a) Increased breakdown of red blood cells b) Liver dysfunction c) Blockage of bile ducts d) All of the above	**1.5**	**CO3**
Q 13	Which of the following is a characteristic feature of asthma? a) Obstructive airflow and wheezing b) Progressive cough with blood c) Chronic production of sputum d) Bilateral pleural effusion	**1.5**	**CO3**
Q 14	Chronic obstructive pulmonary disease (COPD) is characterized by: a) Reversible airflow obstruction b) Progressive airflow limitation c) Increased lung compliance d) Both a and b	**1.5**	**CO3**
Q 15	HIV primarily targets which cells in the body? a) Erythrocytes b) CD4 T-cells c) Neutrophils d) B-cells	**1.5**	**CO4**
Q 16	The most common complication associated with tuberculosis is……	**1.5**	**CO4**
Q 17	Jaundice is characterized by: a) Decreased bilirubin in the blood b) Yellowing of the skin and eyes due to increased bilirubin	**1.5**	**CO4**

	c) Swelling of the liver without color changes d) Loss of appetite without yellowing of skin		
Q 18	Tuberculosis (TB) primarily affects which organ of the body? a) Heart b) Lungs c) Liver d) Kidneys	**1.5**	**CO4**
Q 19	Define prophylaxis.	**1.5**	**CO4**
Q 20	Which of the following is an example of a reversible cellular adaptation? a) Necrosis b) Atrophy c) Hypertrophy d) Both b and c	**1.5**	**CO1**
Section B **(4Qx5M=20 Marks)**			
Q 1	Explain the pathogenesis of mitochondrial damage during cellular injury.	**5**	**CO1**
Q 2	Discuss the various mechanisms involved in inflammation and their mediators.	**5**	**CO2**
Q 3	Outline the basic principles of wound healing and the phases involved. **OR** Differentiate between Positive and negative feedback mechanism.	**5**	**CO3**
Q 4	Briefly explain the pathophysiology of atherosclerosis.	**5**	**CO4**
Section C **(2Qx15M=30 Marks)**			
Q 1	a. Discuss the pathophysiology of malaria caused by *Plasmodium falciparum* and the symptoms associated with it. b. Explain the first-line treatment options for uncomplicated malaria, focusing on the drugs used. c. Discuss preventive measures and chemoprophylaxis for malaria in travellers visiting endemic areas.	**5+5+5**	**CO4**
Q 2	A 30-year-old female presents with fatigue, pallor, and a history of frequent infections. Laboratory tests reveal a low hemoglobin level, a low mean corpuscular volume (MCV), and a high mean corpuscular hemoglobin concentration (MCHC). Bone marrow biopsy suggests abnormal hemoglobin synthesis. Discuss the etiology, pathophysiology, and clinical management of sickle cell anemia.	**15**	**CO5**
Section D **(2Qx10M=20 Marks)**			
Q 1	Attempt both **(a)** and **(b)**, select one question from **(a).** a) Discuss the structure of hemoglobin. **OR** Discuss the composition of blood. b) What is the life cycle of red blood cells (RBCs) in the human body?	**10**	**CO2**

Q 2	Analyze the HIV life cycle within the human body and explain how different drugs used in its prevention target specific stages of the virus's replication process.	**10**	**CO3**