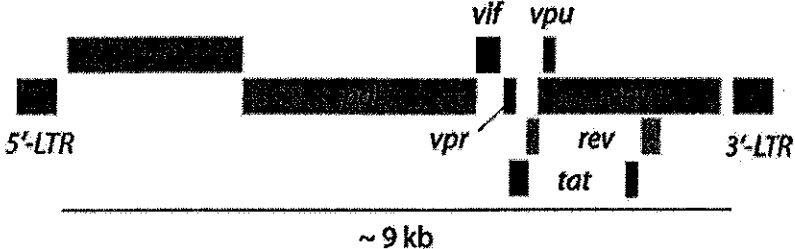


Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Questions	CO	Marks
Q1a)	<p>Find below the schematic representation of HIV genome. Identify the products that these structural and regulatory gene encodes and also explain their role in virus pathogenesis and replication.</p>  <p style="text-align: center;">~ 9 kb</p>	III	5
Q1b)	<p>Health department is considering adopting a new HIV treatment policy that recommends starting ART for all patients immediately after diagnosis, regardless of CD4 count. Critically assess the benefits and challenges of this policy.</p>		3
Q2	<p>ABC, a 26 year male was admitted to the hospital with complaints of fever, loss of weight and appetite and chronic cough with expectoration for past 6 months. Sputum examination revealed long, slender and beaded acid-fast bacilli.</p> <p>a) What diagnostic tests should be performed to confirm disease and assess ABC's overall health status?</p> <p>b) ABC is started on anti-TB therapy (ATT), but his symptoms persist after two months. What could be the reasons for poor treatment response?</p>	IV	4
Q3.a	<p>a) A community reports 500 infectious disease related deaths, with an average age of death at 30 years and a life expectancy of 65 years. Additionally, 10,000 infectious disease cases lead to an average of 20 days of illness per case, with a disability weight of 0.2. Calculate the total DALYs lost due to infectious disease in this community.</p> <p>b) Explain opportunistic mycosis and List two most common infection.</p>	II	2

	<p>c) What alternative antifungal drug class could be used to treat azole-resistant <i>Candida</i> infections, and what is its mechanism of action?</p> <p>d) Who Are Naturally Resistant to <i>Plasmodium falciparum</i> Malaria and HIV?</p>		<p>2</p> <p>1</p>
Q4.	<p>Answer following questions.</p> <p>a) A 28-year-old patient had malaria six months ago and is now experiencing fever and chills again. No recent travel. What species is likely responsible, and what treatment is required?</p> <p>b) A rural village reports an increase in malaria cases despite mosquito control measures. What steps should be taken to investigate and control the outbreak?</p> <p>c) Understanding the life cycle of <i>Plasmodium</i> species is important for designing effective antimalarial drugs. Identify the key stages of the parasite's life cycle, and suggest which stages are the most suitable drug targets.</p>	III	6