

Name:

Enrolment No:



UPES

End Semester Examination, May 2024

Course: Pathogenesis of human microbial diseases

Semester : IV

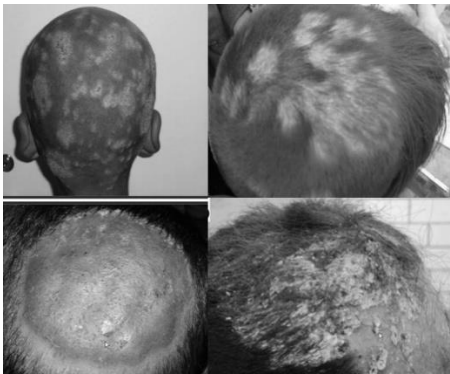
Program: BSc Microbiology

Duration : 3 Hours

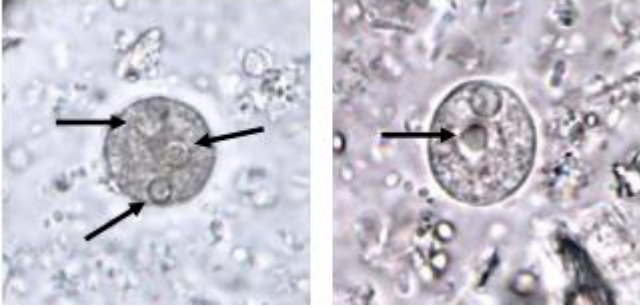
Course Code: HSMB2020

Max. Marks: 100

Instructions:

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	'There are two types of mutations in Influenza viruses – antigenic shift and antigenic drift.' Comment on the statement which one is more serious?	1.5	CO2
Q 2	Name two flaviviruses which are highly prevalent in India.	1.5	CO2
Q 3	Define secretion systems.	1.5	CO1
Q 4	Is there any role of secretion system in bacterial virulence? If so, please comment with one example.	1.5	CO2
Q 5	Name a virulence factor involved in iron acquisition.	1.5	CO1
Q 6	Enlist very important difference between bacteria and virus.	1.5	CO1
Q 7	Identify the disease and name the causative. 	1.5	CO2
Q 8	Write the common and scientific names of vector of Kala Azar.	1.5	CO1
Q 9	Name any biofilm forming pathogen.	1.5	CO1
Q 10	Name the causative of Oral Thrush.	1.5	CO1
Q11	Hydrophobia is a typical symptom of ----- (Name the disease)	1.5	CO2
Q12	Name at least one virus and one bacteria that undergo latency.	1.5	CO2
Q13	Which of the following is not an RNA virus? A. Reovirus B. Orthomyxovirus C. Deltavirus	1.5	CO2

	D. Herpes virus		
Q14	Identify which of the following is not associated with Urinary Tract Infections (UTI)? A. <i>E. coli</i> B. <i>Haemophilus</i> C. <i>Pseudomonas</i> D. <i>Klebsiella</i>	1.5	CO2
Q15	Identify which amongst the following is the drug of choice for anaerobic infections? A. Amoxicillin B. Gentamycin C. Metronidazole D. Vancomycin	1.5	CO1
Q16	Which amongst these is not caused by Herpes viruses? A. Chickenpox B. Shingles C. Glandular fever D. Warts E. Roseola infantum	1.5	CO1
Q17	Draw the structure of Rabies virus and label it.	1.5	CO1
Q18	Draw influenza virus and label it.	1.5	CO1
Q19	Which of the following is a correlate of protection upon vaccination? A. Humoral response B. T-cell response C. Plasma cells and memory cells D. All of the above	1.5	CO2
Q20	Name a polysaccharide vaccine.	1.5	CO1
Section B (4Qx5M=20 Marks)			
Q 1	Give an account of vaccines used against viruses with examples. OR Give an account of vaccines used against bacteria with examples.	5	CO1
Q 2	A 19-year-old male living in a tropical region of India visited the hospital. He came with a lesion on the lower part of the left leg that according to him first appeared about a week before visiting the hospital. A skin biopsy test was performed and the infection was diagnosed to be a parasitic infection. Which of the following is a vector-borne disease that can be transmitted to humans by the bite of infected sandflies? Explain in brief its pathogenesis, life cycle, diagnosis and treatment.	5	CO3
Q 3	A parasitic infection is suspected and thus a stool examination was conducted with three visible nuclei in cyst and invasive diarrhea. Based on your expertise in pathogenesis and the figure given below answer the following	5	CO3

	 <p>(i) Which parasitic disease do you suspect? (1) (ii) What is the vector of this disease? (1) (iii) What is the pathogenesis of the disease? (3)</p>		
Q 4	Explain pathogenesis of Leprosy.	5	CO1
Section C (2Qx15M=30 Marks)			
Q 1	<p>A 61-year-old American woman was referred to a Gastroenterology clinic from primary care provider due to consistent abdominal discomfort and significant weight loss. She looked for physician's advice as she had a tarry stool in the early morning which she had never experienced before. She presented with a 2-month history of burning pain in the epigastric abdomen and chest which radiated toward her back. Her pain worsened after taking aspirin and drinking coffee and was relieved after taking antacids. She looked pale and exhausted when she entered the clinic. Based on your knowledge; answer the following:</p> <p>(i) What do you think is she suffering from? (ii) What is the causative of the disease? (iii) What are the risk factors? (iv) Why is her pain relieved by taking antacids? (v) What is the pathogenesis of the disease? (vi) What are the virulence factors of the associated pathogen? (vii) How do you diagnose it?</p>	15 (1+1+1.5+1.5+5+2+3)	CO3
Q 2	<p>A patient presented with flu-like symptoms and an enlarged liver with high levels of liver enzymes Alanine transaminases (ALT) and Aspartate transaminase (AST) where the former was in higher amounts. Bilirubin is also elevated manifesting in jaundice. Given this answer the following:</p> <p>(i) Which disease is the patient suffering from? (ii) What do you think is/are the possible infectious agent/(s)? (iii) Given that patient has had unprotected sex with multiple partners which types of tests for this disease would you go for to diagnose it accurately. (iv) What is the pathogenesis of this disease? (v) What is the treatment of the disease? (vi) What is the strategy to prevent this disease?</p>	15 (1+1+3+6+1.5+1+1.5)	CO3

	(vii) What are the risk factors for this disease?		
Section D (2Qx10M=20 Marks)			
Q 1	Define mycosis. How do we classify them? Give an account of any one type of mycosis?	10	CO1
Q 2	With the help of illustration and text; write pathogenesis of Malaria. What is meant by definitive host for malaria? Differentiate between different types of malarial fevers. OR Give an account of zoonotic fevers. Classify them based on causative agent. Explain any one of them in detail.	10	CO2