


Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2023

Course: Eukaryotic Microbiology

Semester: II

Program: M.Sc. Microbiology

Time: 03 hrs.

Course Code: HSMB7030

Max. Marks: 100

Instructions: Read question carefully.

SECTION A

S. No.	MCQ's /Fill in the blanks/ T&F (1.5 marks each)	30 Marks	CO
1	<p>Which of the following is a commonly used method for detecting <i>Entamoeba histolytica</i>?</p> <p>A) Microscopy B) Polymerase chain reaction (PCR) C) Both A and B D) None of the above</p>	1.5	CO3
2	<p>Can <i>Trichomonas vaginalis</i> infection be cured?</p> <p>A) Yes, with proper treatment. B) No, it is a chronic infection. C) Yes, but it requires surgery. D) No, it can only be managed with medication.</p>	1.5	CO2
3	<p>What is the purpose of a parasite culture?</p> <p>A) To study the biology and life cycle of parasites B) To test drugs and treatments for parasitic infections C) To develop vaccines against parasites D) All of the above</p>	1.5	CO2
4	<p>Which of the following is a commonly used method for culturing parasites?</p> <p>A) <i>In-vitro</i> culture</p>	1.5	CO4

	<p>B) <i>In-vivo</i> culture</p> <p>C) Both A and B</p> <p>D) None of the above</p>		
5	<p>Which component of the lichen association provides the photosynthetic ability to the organism?</p> <p>A) Fungi</p> <p>B) Algae</p> <p>C) Cyanobacteria</p> <p>D) All of the above</p>	1.5	CO4
6	<p>What is the most commonly used medium for cultivation of algae in laboratory?</p> <p>A) Water</p> <p>B) Nutrient Agar</p> <p>C) Seawater</p> <p>D) Chu's Media</p>	1.5	CO4
7	<p>Which type of algae is commonly used in the production of agar?</p> <p>A) Red algae</p> <p>B) Green algae</p> <p>C) Brown algae</p> <p>D) Blue-green algae</p>	1.5	CO2
8	<p>Which of the following is NOT a factor that can influence the growth of algae in culture?</p> <p>A) Light</p> <p>B) Temperature</p> <p>C) Nutrients</p> <p>D) Gravity</p>	1.5	CO4
9	<p><i>Euglena</i> comes under which of the following group?</p> <p>A) Fungus</p> <p>B) Plant</p> <p>C) Animal</p> <p>D) Protist</p>	1.5	CO5
10	<p>How does fungi obtain their nutrients?</p>	1.5	CO3


	<p>A) Through photosynthesis</p> <p>B) By consuming other organisms</p> <p>C) By absorbing nutrients from the soil</p> <p>D) None of the above</p>		
11	<p>Algae can be used to produce which of the following biofuels?</p> <p>A) Ethanol</p> <p>B) Biodiesel</p> <p>C) Methane</p> <p>D) All the above.</p>	1.5	CO4
12	<p>Harmful algal blooms can produce toxins that can affect _____.</p> <p>A) Fish</p> <p>B) Marine mammals</p> <p>C) Humans</p> <p>D) All of the above</p>	1.5	CO4
13	<p>How is <i>Entamoeba histolytica</i> infection diagnosed?</p> <p>A) Blood test</p> <p>B) Urine test</p> <p>C) Stool test</p> <p>D) X-ray</p>	1.5	CO1
14	<p>The free-floating algae are known as</p> <p>A) Phytoplankins</p> <p>B) Benthons</p> <p>C) Sea weeds</p> <p>D) None of these</p>	1.5	CO1
15	<p>Which of the following is a parasitic protozoan that causes malaria?</p> <p>A) <i>Trypanosoma</i></p> <p>B) <i>Plasmodium</i></p> <p>C) <i>Entamoeba</i></p> <p>D) <i>Giardia</i></p>	1.5	CO1
16	<p>How long can <i>Giardia</i> cysts survive in the environment?</p> <p>A) A few hours</p>	1.5	CO1

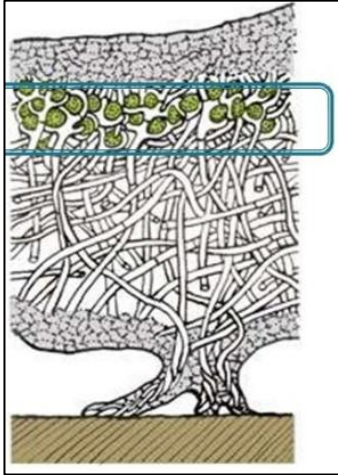
	B) A few days C) A few weeks D) Several months		
17	Amoebiasis can be treated by_____ A) Antibiotics B) Antifungal medication C) Antiviral medication D) None of the above	1.5	CO1
18	Which of the following statements best describes the biological importance of algae? A) Algae serves as a major food source for marine animals. B) Algae are important decomposers in the marine ecosystem. C) Algae play a crucial role in maintaining the balance of atmospheric gases. D) All the above	1.5	CO1
19	What is the incubation period of <i>Trichomonas vaginalis</i> infection? A) 1-2 days B) 1-2 weeks C) 1-2 months D) 6-12 months	1.5	CO1
20	Sexual reproduction of algae is carried by_____. A) Isogamy B) Anisogamy C) Oogamy D) All the above	1.5	CO3

SECTION - B (5 Marks each question)

Q	Short Answer Type Question (5 marks each) Scan and Upload 4 questions 5 marks. Word limit (100-120)	20 Marks	CO
1	Write down the life cycle of <i>Entamoeba histolytica</i> .	5	CO2
2	Write down the economic importance of lichens.	5	CO3
3	Why parasite culture is important in biomedical research?	5	CO1
4	What are the advantages heterokaryosis in fungal reproduction?	5	CO1

SECTION - C (30 Marks)

Q	Two case studies (15 marks each) subsection	30 Marks	CO
1	 <p>Q1: Identify the disease from the above images. Q2: Name of the causative agent of the disease. Q3: How is the disease transmitted to humans? Q4: How the infection can be diagnosed? Q5: Mention the available drugs, used to treat the disease? Q6: What are the molecular mechanisms of drug resistance in this pathogen?</p>	15 (2+2+ 2+4+1 +4)	CO1
2	<p>An 18-year-old girl presents to her pediatrician with her mother for her pre-college checkup. She has no past medical history. She complains of a yellow green malodorous vaginal discharge that started a week ago. She endorses mild pelvic pain. A pelvic exam is performed, and mild cervical tenderness is noted. The cervix is pink, nulliparous, inflamed and is covered by small red punctate spots. A thin yellow green frothy discharge of fishy odor is also detected. Microscopic investigation reveals numerous flagellated trophozoites with undulating membrane.</p> <p>Q1: What could be the causative agent? Q2: What diagnostic procedures are helpful in establishing the etiology of vaginitis? Q3: What could be the source for infection? Q4: What are the virulent factors of this organism? Q5: What are the treatment options for this patient?</p>	15 (2+3+ 2+ 4+4)	CO5
SECTION - D (20 Marks)			

Q	Long Answer type Questions (10 Marks each) Word limit 200-250	20 Marks	CO
1	Describe the morphology, life cycle, and pathogenesis of <i>Trichomonas vaginalis</i> . What are the clinical symptoms and diagnostic methods used for this infection?	10 (2+2+2+2+2)	CO4
2	 <p data-bbox="201 961 678 995">Q1: What structure is shown in figure?</p> <p data-bbox="201 1010 984 1043">Q2: Name different layers of the structure (from top to bottom)?</p> <p data-bbox="201 1058 1151 1092">Q3: Mention different forms of this structure with examples? (Word limit: 120)</p> <p data-bbox="201 1106 850 1140">Q4: Write the economic importance of the structure?</p>	10 (1+3+4+2)	CO3