


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2022			
Course: M.Sc. Microbiology		Semester: IV	
Program: Diagnostic and Industrial Microbiology		Time : 03 hrs.	
Course Code: HSMB7016		Max. Marks: 100	
Instructions:			
Q.No	Section A	(20Q x1.5M= 30 Marks)	COs
	Short answer questions/ MCQ/T&F		
Q	Statement of question		
1.	Thioglycollate media can be used for the growth of a) Aerobes b) Anaerobes c) Facultative anaerobes d) All of the above	1.5	CO1
2.	Pyruvate decarboxylase acetaldehyde + CO ₂ = ? This reaction is specially observed in... a) Lactic acid fermenters b) Ethanol fermenters c) Algae d) Plants	1.5	CO3
3.	Corn steep liquor is one of the major ingredients used for penicillin production a) True b) False	1.5	CO3
4.	The outstanding example of traditional microbial fermentation product is a) Vinegar b) Penicillin c) Citric acid d) Tetracyclin	1.5	CO4
5.	In the industrial production of streptomycin, the secondary metabolite or byproducts is B12 a) True b) False	1.5	CO3
6.	Yeasts with acetic acid bacteria involves for the vinegar production a) True b) False	1.5	CO4

7.	<p>Transgenic animals are for improvement of the quality of</p> <p>a) Milk b) Meat c) Eggs d) All of the above</p>	1.5	CO3
8.	<p><i>Aspergillus nigricans</i> is used for industrial production of citric acid.</p> <p>a) True b) False</p>	1.5	CO4
9.	<p>Penicilin is commercially produced by</p> <p>a) <i>P. notatum</i> b) <i>P.chrysogenum</i> c) <i>P. sp.</i> d) <i>None of the above</i></p>	1.5	CO3
10.	<p>Select the correct statement on batch fermentation</p> <p>a) Closed system b) It can be solid state c) It is time-bound d) All of the above</p>	1.5	CO3
11.	<p>For MPN test which one of the following media is the best choice?</p> <p>a) Mac Conkey's medium b) Stuart's medium c) NB medium d) All of the above</p>	1.5	CO2
12.	<p>Beer contain 40% alcohol</p> <p>(a) True (b) False</p>	1.5	CO3
13.	<p><i>Penicillium camemberti</i> is used for ripening of</p> <p>(a) Roqueforti cheese (b) Camemberti cheese (c) Fruits (d) all of the above</p>	1.5	CO4

14.	Blood agar is a (a) differential media (b) selective (c) enrichment media (d) none of the above	1.5	CO2
15.	Nosocomial infection is type of infection that acquired by the patient from a) Hospital b) Food c) Water d) All of the above	1.5	CO1
16.	Gamma-hemolytic <i>Streptococci</i> are a) hemolytic b) non-hemolytic c) both a and b d) none of the above	1.5	CO2
17.	Chocolate agar is used to enrich the growth of (a) Haemophilus and Neisseria species (b) Streptococcal species (c) Mycobacterial agents (d) None of the above	1.5	CO2
18.	Modified ThayerMartin media is a (a) antibiotic modified chocolate agar media (b) selective for pathogenic Neisseria (c) it contain trimethoprim (d) all of the above	1.5	CO2
19.	Endemic disease refers to (a) sudden increase of a disease spreading through a population (b) constant presence of a disease with lower spreading (c) sudden increase of a disease across several countries (d) none of the above	1.5	CO1
20.	Hektoen enteric agar is used for selective growth of <i>Salmonella</i> and <i>Shigella</i> a) True b) False	1.5	CO2

	Section B	(4Qx5M=20 Marks)	CO
Q			
1.	What is the use of MaConkey agar? How will you identify the microbes grown on MaConkey agar by interpreting the colony characteristics?	2+3=5	CO2
2.	Differentiate endemic, pandemic, epidemic, disease prevalence, and disease incidence.	5	CO1
3.	How to produce amylase enzyme?	5	CO3
4.	What would be the down-stream processing of citric acid production by using <i>Aspergillus</i> sp.?	5	CO4
	Section C	(2Qx15M=30 Marks)	
Q	Statement of question (Case studies)		CO
1.	Suppose you are working on a project of isolating a cellulase producing microbes from plant tissues. You isolated few fungi and now you want to check if they can produce cellulase in laboratory. a) What types of media you are going to use for such testing? b) What types of upstream and downstream processing you will perform? c) If you need to immobilize that enzyme, how you will do that? d) Discuss on the various industrial application of such immobilized enzyme.	2+5+5+3=15	CO4
2.	A patient with acute symptoms of gastroenteritis and your doctor suspect some food borne infection. The doctor asked you to take sputum sample of the patient and asked you to check for infection from <i>Salmonella</i> . a) What types of media you will choose to that and why? b) How you will differentiate the contaminating microbes? c) Can you use blood agar for such case? Explain why? d) What types of quality control you should do alongside the test?	4+4+3+4=15	CO2
	Section D	(2Qx10M=20 Marks)	
Q	Statement of question		CO
1.	a) Define primary, secondary, and latent infection b) What types of precautions should be taken to avoid reinfection? c) How to collect good quality specimen by avoiding normal microflora.	3+3+4=10	CO1
2.	Suppose you got the following types of unacceptable specimens for testing. What would be your action to address the issues?. a) Urine and sputum samples drawn more than 24h before b) Dry swab c) Duplicate specimen	10	CO1