Name:	UPES
Enrolment No:	UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End semester Examination, December 2021

Course: B.Pharm.   **Semester: III**
Program: Pharmaceutical Microbiology   **Time 03 hrs.**
Course Code: BP303T   **Max. Marks: 75**

SECTION A

1. Each Question will carry 1 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.	CO	Multiple Choice Questions (Attempt all questions)	Marks
		Multiple Choice Questions (each answer carry one marks)	**1 × 20**
Q1	CO1	Polymer of N-acetyl glucosamine and N-acetyl muramic acid was found in… a) Bacteria b) Fungi c) Algae d) Protozoa	**1**
Q2	CO1	Germ theory of disease is proposed by… a) Robert Whittaker b) Robert Koch c) William Whittaker d) Louis Pasteur	**1**
Q3	CO1	A large group of Actinomycetes are known for their antibiotic production ability a) True b) False	**1**
Q4	CO1	Genetic materials of HIV will be degraded by which of the following enzymes? *a) RNase* (degrade RNA) *b) DNase* (degrade DNA) *c) Protease* (degrade protein) *d) None of the above*	**1**
Q5	CO1	Transmission Electron Microscope can create 3D image of the samples a) True b) False	**1**
Q6	CO1	Lipo-polysaccharide is the cell wall components of….. a) Gram positive bacteria b) Gram negative Bacteria c) Candida d) None of the above	**1**
Q7	CO1	To isolate a nitrogen fixing bacteria the growth media should not contain which of the following component…. a) P	**1**

		b) C c) N d) Mg	

Q8	CO2	Autoclaving the best method for preserving biomolecules
		    a) True
		    b) False
			1

Q9	CO2	Which of the following pathogens is present in raw milk?
		    a) Tubercle bacilli
		    b) Saccharomyces
		    c) Rickettsia
		    d) None of the above
			1

Q10	CO2	Fluid thioglycollate media are being used for
		    a) Sterility testing
		    b) Pyrogen testing
		    c) Checking antibiotic sensitivity
		    d) All of the above
			1

Q11	CO3	Best suitable media for isolation of *Candida albicans* is…..
		    a) Sabouraud dextrose agar
		    b) Nutrient agar
		    c) Triple-sugar-iron agar
		    d) MacConkey's agar
			1

Q12	CO2	Which of the following method you will choose to sterilize a heat-sensitive solution
		    a) Autoclave
		    b) Tyndalization
		    c) Filtration
		    d) Radiation
			1

Q13	CO2	If you are purifying air with a HEPA filter and you are passing air that contains suspended particles with a diameter less than 0.3micron. The efficiency of the HEPA filter will be
		    a) 99.99%
		    b) 90 %
		    c) 99.97%
		    d) 100%
			1

Q14	CO3	Chemical dosimeter is used during
		    a) Heat sterilization
		    b) Filtration sterilization
		    c) Ethylene oxide sterilization
		    d) Radiation sterilization
			1

Q15	CO3	Pyrogen test is mandatory for all pharmaceutical preparations for checking live microbial cells.
		    a) True
		    b) False
			1

Q16	CO4	The potency of an antibiotic is determined by phenol coefficient value
		    a) True
		    b) False
			1

Q17	CO4	Which of the following factors are responsible for spoilage of pharmaceutical preparation
		   a) Nutritional factors
		   b) Moisture content
		   c) Temperature
		   d) All of the above
			1

Q18	CO4	Soyabean casein digest medium is used during sterility testing of a pharmaceutical preparation to detect mainly the presence of fungi
		   a) True
		   b) False
			1

Q19	CO5	Which of the following cell line is from human origin
		   a) HEK-293
		   b) HeLa
		   c) HL-60
		   d) All of the above
			1

Q20	CO5	Animal cell line viability is tested by using.
		   a) Trypan blue
		   b) Crystal violet
		   c) Malachite green
		   d) All of the above
			1

<h3 style="text-align:center">SECTION B : Long Answers (Answer any 2 out of 3)</h3>

1. Each Question will carry 10 Marks
2. Instruction: Attempt any two (02)

			2 × 10
Q1	CO1	a) Compare cell wall of gram positive and gram negative bacteria, b) Calculate number of generation (n) and generation time (G) of a bacterial species if it produces 10^6 cells in just 30 min and the initial bacterial cell count was 10^3.	**(4+6)=10**
Q2	CO3	a) Define bacteriostatic, bactericide, and antiseptic agents b) Write ideal properties of a disinfectant. c) Briefly describe the cup-plate method for antibiotic evaluation	**3+3+4=10**
Q3	CO2	a) Briefly discuss different types of heat-based sterilization techniques b) Suppose you need to sterilize your products only after packaging. What types of methods you will choose? Explain why? c) Can pasteurization sterilize a liquid? explain	**4+3+3=10**

<h3 style="text-align:center">SECTION C : Short Answers (Answer any 7 out of 9)</h3>

1. Each Question will carry 5 Marks
2. Instruction: Attempt any seven (07)

			7 × 5
Q1	CO 2	a) What is the difference between D and Z value b) How X-ray can affect and destroy live cells?	**(2+3)=5**

Q2	CO 4	a) Why media suitability test and growth promotion tests are necessary during sterility testing b) Define Pyrogen	**(3+2)=5**
Q3	CO3	a) Write how glutaraldehyde affect and destroy microbial cell b) What are the advantages and limitation for using glutaraldehyde	**(2+3=5)**
Q4	CO 1	c) Compare a scanning and transmission electron microscope (at least 3) d) Calculate resolution power of a microscope when the NA is 2.5 and the light wavelength is 750 nm.	**(2+3)=5**
Q5	CO 4	c) Classify fungi as per morphology? d) Write a short note on importance of fungi in pharmaceutical science.	**(2+3)=5**
Q6	CO3	I) Match the following with appropriate example a. Quaternary ammonium compound 1. Acridine b. Dye 2. Metaphen c. Alcohol 3. Cetrimide d. Heavy metal 4. Chlorobutol II) Efficiency of HEPA filter is…….	**4+1=5**
Q7	CO4	a) How you can preserve pharmaceutical products? b) What types of factors affect the preservation most?	**2+3=5**
Q8	CO5	a) Discuss the importance of animal cell culture in pharmaceutical science. b) What is primary and transformed cell culture?	**2.5+2.5=5**
Q9	CO2	i. Match the following a. Autoclave 1. Glassware b. Hot-air oven 2. Disposable syringe c. Gamma radiation 3. Antibiotic solution d. Filtration 4. Space-craft e. Ethylene oxide 5. Bacterial growth media	**5**