Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination - January, 2021

Course: Biosafety and Aseptic Techniques **Semester: I**

Program: M.Sc.-Microbiology-I **Time: 03 hrs.**

Course Code: HSMB7010 **Max. Marks: 100**

Instructions: All the sections are compulsory.

SECTION A

1. Each Question will carry 5 Marks

2. Instruction: True or False /MCQ/Fill in the blanks Questions. Answers all the 6 questions.

S. No.	Questions	CO
Q 1	Match the following from 1 to 4 terminology with option from A to D options. 1) Physical Security 2) Program Management 3) Information Technology Security 4) A bioweapon is easy to acquire, easy to work with, and highly toxic A) Ricin B) Detectors, access controls, alarm systems, barriers, guards and law enforcement C) Oversee implementation of biosecurity program: security plan, incident response plan, training program, self-assessment and auditing D) Control access to sensitive information whether paper-based, telephonic, photographic, or electronic media	**CO4**
Q 2	The World Health Organization (WHO) has a system for classifying biological agents based on the risks that they pose. Match the descriptions to the appropriate risk group level (1-4) (Fill in the Blanks, write the risk group level) 1. Agents that are unlikely to cause disease and therefore pose low levels of individual and community risk level risk group level…… 2. Agents that cause serious or fatal disease that often are not treatable;	**CO3**

	often are contagious risk group level…… 3. Agents that typically cause respiratory infections that cause serious diseases, although they are usually treatable risk group level…….. 4. Agents that cause diseases, but these typically are not serious and treatments are available risk group level…….	
Q 3	Complete the sentence in the statement (fill in the blanks): An initial Biological Risk Assessment form will be submitted by the principal investigator to the……... . The…….. will review the assessment form and will determine the process necessary for review, including whether or not further review by the…….. is warranted.	**CO3**
Q 4	Biosafety Level 2 practices, equipment and facility design and construction are applicable to work with dangerous and exotic agents that pose a high individual risk of life-threatening disease, which may be transmitted via the aerosol route and for which there is no available vaccine or therapy. (True/False)	**CO2**
Q 5	Match the following materials from 1 to 4 with their respective methods of sterilization From A to D: 1. Water 2. Rubber Gloves 3. Culture media 4. Culture plate A. Autoclave B. Dry heat C. UV Radiation D. 70 % Ethanol	**CO1**
Q 6	Bioaerosols are not a major air pollutant commonly found both indoors and outdoors. High exposure levels may result in various beneficial health outcomes. Laboratories, which are indoor environments carefully designed for specific purposes, may contain low levels of bioaerosols, which may imrove worker's health, and contaminate experimental results. (True/ False)	**CO4**
SECTION B **1. Each question will carry 10 marks. Answer all 5 questions.** **2. Instruction: Write short / brief notes**		
Q 1	Briefly explain the best practices to follow when handling hazardous biological agents.	**CO3**
Q 2	Define criteria for the selection of a disinfectant based on risk assessment.	**CO2**

Q 3	Explain is the significance or application of heating ventilation and air conditioning (HVAC) system in industrial microbiological laboratories.	**CO3**
Q 4	Explain in brief is the biological terrorism and biosecurity.	**CO4**
Q 5	Define the components of a biosafety program for a research institution. OR Explain knowledge, skills and abilities required of biosafety person duties.	**CO3** **CO2**
SECTION C **1. Each question will carry 20 marks. Answer any one questions.** **2. Instruction: Long Answer type questions**		
Q 1	Classify the biosafety level 1- 4 laboratory. Explain are the different sources of contamination in an aseptic area and methods of prevention. OR Explain in brief research study involved in the bioaerosol levels and the indoor air quality of laboratories in Bangkok. (write the answer with following rubrics: Introduction (2), Methods (5), Results (5), Discussion (5) and Conclusion (3)).	**CO1** **CO4**