



8. What does a medical contact card **NOT** contain?
  - a. Health Insurance details
  - b. Name of the laboratory
  - c. Address of the laboratory
  - d. Card holder's picture
9. Triclosan is a
  - a. chloramine
  - b. NaDCC
  - c. quaternary ammonium compound
  - d. phenolic compound
10. Which of the following GMOs were genetically engineered for glyphosate-resistance?
  - a. Bt Cotton
  - b. Flavr Savr tomatoes
  - c. DroughtGard corn
  - d. Roundup ready soybeans

**Fill in the blanks.**

11. LAI stands for \_\_\_\_\_.
12. In class I BSC, air passes over the work surface and is discharged from the cabinet through the \_\_\_\_\_.
13. Arbovirus diseases, such as Zika, yellow fever, dengue and Japanese encephalitis are caused by \_\_\_\_\_viridae.
14. Granules or tablets of calcium hypochlorite ( $\text{Ca}(\text{ClO})_2$ ) generally contain about \_\_\_\_\_ percent available chlorine.
15. Ideally the temperature in the primary combustion chamber of an incinerator should be at least \_\_\_\_\_ °C and that in the secondary chamber should be at least \_\_\_\_\_ °C.
16. Gas and electrically heated \_\_\_\_\_ have borosilicate glass or ceramic shields that minimize the splatter and dispersal of infected material when transfer loops are sterilized.
17. \_\_\_\_\_ gloves should be worn when there is a potential exposure to sharp instruments e.g. during postmortem examinations.
18. \_\_\_\_\_ is the theoretical yield of a crop genotype that can be achieved without any limitations of water or nutrients and without losses to pests and diseases.
19. \_\_\_\_\_ is an enclosure, container, or structure adapted or prepared for keeping animals under semi-natural conditions for observation or study or as pets.
20. The degree of toxicity of a hazardous toxin is commonly expressed in terms of \_\_\_\_\_ that will kill 50% of the test animals via a specific route of exposure.

KATHMANDU UNIVERSITY  
End Semester Examination [C]  
April/May, 2023

04 APR 2023

Level : B.Tech.  
Year : I  
Time : 2 hrs. 30 mins.

Course : BIOT 102  
Semester : II  
F.M. : 55

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SECTION "B"  
[11Q. × 5 = 55 marks]

Attempt *ANY ELEVEN* questions.

1. What factors should be considered for performing a microbiological risk assessment?
  2. What are the laboratory practices and procedures for access and personal protection in BSL 1 and 2 laboratories?
  3. List three molds of special concern for biosafety. What are the safety considerations for handling them in laboratory?
  4. Differentiate between enveloped and naked viruses. List two DNA viruses and two RNA viruses that infect humans.
  5. What are the additional laboratory design and facilities for BSL4 over BSL3?
  6. Define aerosols. What laboratory activities produce potentially infectious aerosols? What are the biosafety measures?
  7. What are the various biosafety equipment used in a microbiological laboratory and write their safety features.
  8. Discuss the potential hazards associated with the handling of animal cell cultures and their safety measures.
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9. What are biological toxins? Write the laboratory practices for working with toxins.
  10. What are GMOs? Discuss the applications of genetic engineering in crop improvement.
  11. Describe agrobacterium-mediated transformation method of DNA delivery in plants.
  12. Write the features of different types of autoclave used in the laboratory. What precautions should be taken in the use of autoclaves?
  13. What do you mean by sterilization? Differentiate between antiseptics and disinfectants with examples.

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