FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DEPARTMENT OF MICROBIOLOGY
SECOND SEMESTER EXAMINATION,
2022/2023 ACADEMIC SESSION

Course Title: Virology
Course Code: MCB521 **Unit: 3 Units**
Instructions: (i) Answer any **Five (5)** questions.
(ii) Do not write or scribble on the question paper.
Date/Time: 11th December, 2023/11:30AM **Time Allowed: 2hr 30mins**

1(a). Describe the most important mechanism of genetic modification in viruses.
1(b). What advantages does non-enveloped virus have over enveloped virus?
1(c). State five major differences between virus and bacteria.

2(a). Write short notes on the following;
i. Prions **ii.** Defective viruses **iii.** Virusoids **iv.** Pseudovirions
2(b). Highlight the basic structural form of virus and give one example in each case.

3(a). Describe the general properties of virus using the following sub-headings;
i. Genomes **ii.** Structure **iii.** Size **iv.** Metabolism
3(b). Distinguish between fusion and endocytosis as form of viral entry into the host cell.

4(a). Describe the strategies employed in viral assembly and release.
4(b). Criticize the statement "virus has done more harm than good to our society".

5(a). State the significance of plaque count technique for enumeration of phages
5(b). Give three examples of viruses that can be transmitted through the following means;
(i) respiratory **(ii)** genitourinary **(iii)** blood **(iv)** sexual contact **(v)** zoonoses **(vi)** fecal-oral routes.

6a. Enumerate the type(s) of cancer associated with the following virus:
i. Hepatitis C virus **ii.** Human papillomaviruses **iii.** Epstein-Barr Virus
iv. Human T lymphotropic virus **v.** Human cytomegalovirus
6b. Discuss two (2) applications of genetically engineered viruses

7. Techniques for cultivating and isolating animal viruses are: inoculation into embryonated egg; Inoculation into animal; and Cell culture techniques.
a. Which of these techniques is the most widely used for isolating animal virus?
b. State the advantages and disadvantages of the technique in (a) above
c. Which of the techniques above can be used for vaccine production?
d. Which of the three techniques would you prefer to use when cultivating animal virus? Give reasons.