NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
DEPARTMENT OF BIOLOGICAL SCIENCES
2024_2 EXAMINATION

COURSE CODE: BIO415
COURSE TITLE: Virology and Tissue culture
CREDIT UNIT: 3

TIME ALLOWED:3 HOURS

INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) QUESTIONS

1a. Define Viroplasm. (2mrks)
1b. Identify the group of living organisms that are not resistant to viruses. (2mrks)
1c. Explain the contribution of the following virolgist; (i) Architect Buckminster Fuller and (ii) Caspar. (6mrks)
1d. Deduce the implication of the absence of sophisticated enzymatic and biosynthetic machinery of viruses with regards to cultivation of other microbes in the laboratory. (4mrks).
1e. Discuss the family Togaviridae under the following; (i) Genera (ii) Nucleic acid, (iii) disease agents (iv) replication (11mrks)

2a. Expatiate why "symptomatology" is not very important to virologist. (4mrks)
2b. Mention and provide the meaning of the genera in sub-family Poxviridae. (9mrks)
2c. List two (2) viral proteins.(2mrks)

3a. Provide the meaning of the following viruses. (i)PAPOVA (ii)PICORNA (5mrks)
3b. Describe the role of heavy metal stains in emphasizing the viral morphology.(6mrks)
3c. Identify the transmission of the following viruses: Alphaviruses, Rubella, Flavivirus and Hantaviruses. (4mrks)

4a. What are satellite viruses? (4Mrks)
4b. Describe the features of satRNAs and satellite viruses that make them competent biological systems for the study of the molecular biology of viruses. (8 mrks)
4c. Distinguish between viroids and satellites? (3mrks)

5a. Explain the term viral replication. (4mrks)
5b. Highlight the components of Virus mRNA.(3mrks)

5c. Describe the break-rejoin mechanism in recombination citing a good example with herpesviruses (8mrks)

6a. Given the following disease agents; kuru agent, creuzfeldt-Jacob agent, mad cow agent, chronic wasting agent. Provide their hosts, site of infection and diseases caused in a tabular form. (9mrks)

6b. Explain “minimal criteria for virus purity”.(4mrks)

6c. Mention the techniques of Virus purification. (2mrks)