

Write the following information in the first page of Answer Script before starting answer

ODD SEMESTER EXAMINATION: 2020-21

Exam ID Number _____

Course _____ Semester _____

Paper Code _____ Paper Title _____

Type of Exam: _____ (Regular/Back/Improvement)

Important Instruction for students:

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1st page.
3. After completion of examination, Scan all pages, convert into a single PDF and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

M.Sc. MICROBIOLOGY
THIRD SEMESTER
VIROLOGY
MMB - 302

Duration: 3 hrs.

Full Marks: 70

(**PART-A: Objective**)

Time: 20 min.

Marks: 20

Choose the correct answer from the following:

1×20=20

1. Viruses are.....
 - a. Prokaryotic organism
 - b. Prokaryotic intracellular parasites
 - c. Obligate intracellular parasite
 - d. Cellular organism
2. The protein coat of a virus is called_____
 - a. Spikes
 - b. Capsid
 - c. Envelope
 - d. Nucleic acid
3. Prions are
 - a. Plant viruses
 - b. protein-containing infectious particles
 - c. Circular single stranded RNAs
 - d. Independent virus particles
4. A fluorescent dye used in immunofluorescence test is.....
 - a. Acridine orange
 - b. Bromophenol blue
 - c. Basic fuchsin
 - d. Rhodamine B
5.enzyme can be conjugated to antibodies (Ab) in ELISA test?
 - a. Horseraddish peroxidase
 - b. Protease
 - c. Hydrogen peroxide
 - d. lipase
6. What is another name for a non-enveloped virus?
 - a. enveloped virus
 - b. latent virus
 - c. naked virus
 - d. provirus
7. Which of the following leads to the destruction of the host cells?
 - a. temperate phage
 - b. prophage
 - c. lysogenic cycle
 - d. lytic cycle
8. A positive-strand RNA virus:
 - a. will be degraded by host enzymes
 - b. can be used directly to translate viral proteins.
 - c. must first be converted to a mRNA before it can be translated.
 - d. is not recognized by host ribosomes.
9. Which of the followings cannot be used to culture viruses?
 - a. Blood agar
 - b. animal host
 - c. embryo
 - d. tissue culture

10. Which of the following tests can be used to detect the presence of a specific virus?
- a. EIA
 - b. RT-PCR
 - c. PCR
 - d. all of the above
11. Which of these infectious agents do not have nucleic acid?
- a. bacteria
 - b. viroids
 - c. prions
 - d. Algae
12. A common polyhedral capsid shape of viruses is a :
- a. Icosahedron
 - b. Cube
 - c. Sphere
 - d. Pentagon
13. Bacteriophage are readily counted by the process of:
- a. Immunoassays
 - b. ELISA
 - c. Tissue cell culture
 - d. Plaque assays
14. The shape of the TMV is.....
- a. Oval shaped
 - b. Cuboidal shaped
 - c. Rod-shaped
 - d. Spherical shaped
15. Bacteriophages are
- a. Viruses that attacks bacteria
 - b. Bacteria that attacks viruses
 - c. Free living viruses
 - d. All of these
16. AIDS virus contains.....
- a. dsRNA
 - b. dsDNA
 - c. ssDNA
 - d. ssRNA with protein
17. The direct ELISA test requires
- a. known antigen
 - b. patient antibody
 - c. known antibody
 - d. complement
18. Which radioisotopes is used in the Radioimmunoassay test
- a. ^{125}I
 - b. ^{235}U
 - c. ^4He
 - d. none
19. The antigen causing agglutination is called.....
- a. Agglutinate
 - b. Agglutinin
 - c. Agglutinin
 - d. Precipitinogen
20. Cauliflower mosaic virus is a virus
- a. RNA
 - b. DNA and RNA
 - c. DNA
 - d. none

-- --- --

(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is virus? Describe the general characters and morphology of viruses. 2+8=10

2. a. Describe viroids, virosoids and their unique characteristics. 5+5=10
b. What is prion? How they are spread?

3. Write short note on 5+5=10
 - a. Lytic cycle
 - b. Application of bacteriophage in health

4. a. Briefly describe haemagglutination and haemagglutination inhibition. 5+5=10
b. What is plaque assay? Write the procedure of plaque assay.

5. What is ELISA/EIA? Briefly describe principle and method of indirect ELISA. 2+3+5=10

6. a. What is TMV? Briefly discuss about the Symptoms, transmission and prevention of TMV. 2+3+5=10
b. Describe the replication cycle of tobacco mosaic virus.

7. a. What is HIV? Write about HIV transmission, prevention and treatment of HIV. 2+3+5=10
b. Describe the life cycle of HIV.

8. a. Briefly explain the pathogenesis of pox virus. 5+5=10
b. Write the Laboratory diagnosis and treatment of Pox virus.

= = *** = =