18072

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – M.Sc.(MB)-2024
Course Name – Parasitology and Virology
Course Code - MMB30210
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Define the term parasite.
a) An organism that lives on or in a host and benefits at the host's expense
b) A virus infecting a cell
c) A symbiont helping its host
d) A cell component

(ii) List the three major categories of parasites.
a) Protozoa, Helminths, Arthropods
b) Bacteria, Viruses, Fungi
c) DNA, RNA, Retroviruses
d) Amoeba, Yeast, Plasmids

(iii) Identify a feature common to all viruses.
a) Presence of nucleic acid
b) Presence of chloroplast
c) Capability to form spores
d) Possession of a nucleus

(iv) Describe one diagnostic method used for malaria.
a) Giemsa-stained blood smear
b) Urine culture
c) X-ray imaging
d) ELISA for toxins

(v) Interpret the term helminths.
a) Multicellular parasitic worms
b) Unicellular protozoans
c) Non-living infectious agents
d) Photosynthetic microbes

(vi) Identify the host where Schistosoma sexually reproduces.
a) Human
b) Bird
c) Water snail
d) Frog

(vii) Explain what occurs during viral uncoating.
a) Viral genome is released from capsid
b) Virus attaches to host
c) Virus exits cell
d) Viral envelope fuses with host nucleus

(viii) Describe the role of host cell ribosomes in viral replication.
a) Translate viral mRNA into proteins
b) Make host antibodies
c) Form viral DNA
d) Prevent virus entry

(ix) Explain the difference between enveloped and non-enveloped virus release.

a) Enveloped viruses bud, non-enveloped viruses lyse the host
b) All viruses bud from host
c) Naked viruses fuse with the host nucleus
d) Non-enveloped viruses are not released

(x) Identify the role of macrophages in parasitic infections.

a) Engulf and digest pathogens
b) Produce antibodies
c) Destroy host tissue
d) Release histamine

(xi) Analyze the contribution of eosinophils in helminth defense.

a) They release toxic granules to kill worms
b) They increase blood clotting
c) They present viral peptides
d) They suppress lymphocytes

(xii) Examine the rationale for investigating helminth immunomodulation in therapy design.

a) Helminths can guide treatment for immune-related diseases
b) They only harm the host
c) They destroy antigens
d) They block all immune signals

(xiii) Analyze the use of monoclonal antibodies in viral diseases.

a) Target specific viral antigens for neutralization
b) Used only for bacterial infections
c) Activate viruses
d) Used to infect red cells

(xiv) Determine how antivirals work against viruses.

a) Inhibit viral entry, replication, or release
b) Increase cell division
c) Stimulate bacteria to multiply
d) Activate host enzymes

(xv) Determine the use of vector control in parasitic disease prevention.

a) Reduces contact between humans and vectors
b) Boosts antibodies
c) Enhances viral load
d) Promotes helminth growth

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define parasitology and mention its scope in medical microbiology. (3)
3. Classify protozoan parasites and mention the diseases they cause. (3)
4. Define the role of reverse transcriptase in retroviruses. (3)
5. Justify why a zoonotic infection poses a significant public health concern, using one example to support your answer. (3)
6. Compare immune responses to protozoa and helminths. (3)

OR

Analyze the significance of antigenic variation in parasites. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Evaluate the importance of virus and parasite classification in diagnosis and control. (5)
8. Describe the life cycle of Plasmodium and its clinical significance. (5)
9. Explain how structural proteins of viruses aid in vaccine development. (5)
10. Design a comprehensive framework explaining zoonoses, incorporating relevant examples and proposing effective control strategies. (5)
11. Justify the role of sanitation in helminth infection control. (5)
12. Analyze the immunological basis of pathology in schistosomiasis. (5)

OR

Compare the immune responses against protozoan vs. helminth infections. (5)

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