



BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Sc.(MLT)-2019/B.Sc.(MLT)-2021
Course Name – Medical Mycology and Virology
Course Code - BMLT503
(Semester V)

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) Identify the correct culture medium which promotes mold sporulation
 - a) Potato dextrose agar
 - b) Yeast peptone dextrose agar
 - c) SDA
 - d) Nutrient agar with special mycolic peptone
 - (ii) Identify the surface colour for *Aspergillus* sp. when growth occurs on PDA medium
 - a) Black
 - b) Creamy white
 - c) Dark green
 - d) Dirty white with yellow spores at the center
 - (iii) Identify the causative agent of ringworm
 - a) myeloma
 - b) histoplasma
 - c) epidermatophyton
 - d) none of these
 - (iv) Choose from the following, the infection that does not have serologic diagnosis:
 - a) Candidosis
 - b) Aspergillosis
 - c) Mycetoma
 - d) Rinosporidiosis
 - (v) Identify the correct option with respect to Alopecia areata
 - a) over growth of hair
 - b) hyper pigmentation of hair
 - c) hair loss in sharply defined areas, usually the scalp
 - d) hypo pigmentation
 - (vi) Select from the following the method that is most sensitive method of detecting infection by CMV in newborn:
 - a) Isolation of virus
 - b) Identification of characteristic cells in gastric secretions
 - c) Detection of IgM antibody by IF
 - d) Detection of complement fixing antibodies
 - (vii) Cite the least common cultural characteristics of fungi from the following

- a) They are heterotypic eukaryotic microorganisms
 b) The cell wall is composed of chitin
 c) Reproduces asexually only
 d) Can cause superficial and systemic diseases
- (viii) The pH level of the fungal culture media is an important growth factor for fungi, state best pH range for the growth
 a) pH 7 to 9
 b) pH 3 to 5
 c) pH 2 to 7
 d) pH 4 to 6
- (ix) The protective covering of the genetic material of viruses are called
 a) Capsid
 b) Capsomere
 c) Virus coat
 d) Envelope
- (x) An example of retrovirus is
 a) HIV
 b) HPV
 c) Hepatitis A
 d) Hepatitis B
- (xi) The type of viral life cycle where the host cell is ruptured at the end producing viral particles is called
 a) Lytic cycle
 b) Rolling circle replication
 c) Lysogenic cycle
 d) Prophage induction
- (xii) The host of bacteriophage is
 a) Fungi
 b) Bacteria
 c) Protozoa
 d) Algae
- (xiii) Mention the name who is widely regarded as the father of virology
 a) Martinus Beijernick
 b) Anton Van Leewenhook
 c) Robert Koch
 d) Louis Pasteur
- (xiv) Histoplasma is transmitted in which Form from the environment to the human body
 a) Conidia
 b) Arthospore
 c) Microconidia
 d) Yeast
- (xv) An abortive infection is one in which-
 a) The infected cells are killed
 b) Progeny virus is not produced
 c) Transplacental infection of the fetus occurs
 d) Cell multiplication is stopped

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the basic structure of HIV (3)
3. Describe the term Pseudomycellium with a proper example and diagram (3)
4. Discuss the collection and transport processes of viral sample (3)
5. Explain the term Fungi Imperfecti (3)
6. Describe the concept of viral antigenic variation. Analyze this phenomenon challenges the development of effective vaccines against certain viruses. (3)

OR

Patient X feeling weak from last 6 months and having history of blood transfusion, doctor advised HIV test both screening and confirmation. Set up an experiment protocol to diagnose the Viral disorder via PCR (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. With example discuss the general features of basidiomycetes (5)
8. Discuss the working principle of DTM (5)

9. In your lab you have 20% KOH, 10% KOH, Gram staining kit, Indian ink and LPCB stain. (5)
Correlate the fungal detection method for said items.
10. Virologist Dr. Das told you that Virus A is enveloped and Virus B is a naked virion, analyze this (5)
using virus morphological characteristics.
11. If you want to detect HCV and HBV using RT PCR, you need Rtase for first one only. Focus on (5)
this and explain this diagnosis process principle.
12. In microbiology lab you get nail and skin samplr for fungal detectionand you have to perform (5)
KOH mounting. Unfortunately, you have 10% KOH in the lab, is it possible to perform the test?
Expain your answer

OR

In SDA culture medium, fungi can grow easily but bacteria are unable to grow. Evaluate the (5)
statement with proper justification
