



BRAINWARE UNIVERSITY

Term End Examination 2022

Programme – B.Sc.(MLT)-2019/B.Sc.(MLT)-2020

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) Choose the fungi that is commonly found in moldy foods & can produce aflatoxin
- | | |
|----------------------------------|------------------------|
| a) <i>Stachybotrys chartarum</i> | b) <i>Mucor</i> spp |
| c) <i>Aspergillus flavus</i> | d) <i>Rhizopus</i> spp |
- (ii) Choose the correct option with respect to Infection with dermatophyte
- | | |
|---|--|
| a) \hat{A} intravenous drug abuse | b) \hat{A} inhalation of the organism from contaminated bird feces |
| c) adherence of the organism to perspiration moist skin | d) \hat{A} fecal-oral transmission |
- (iii) The type of cell culture that is used to support viral replication as it can reproduce for an extended number of generations is:
- | | |
|-------------------------|----------------------------|
| a) Primary cell culture | b) Continuous cell line |
| c) Cell strain | d) Diploid fibroblast cell |
- (iv) A person who pricked her finger in rose thorn later develops a local pustule that progresses to an ulcer. Several nodules then develop along the local lymphatic drainage. The most likely agent is
- | | |
|---|--------------------------------|
| a) <i>Aspergillus fumigatus</i> | b) <i>Sporothrix schenckii</i> |
| c) \hat{A} <i>Cryptococcus neoformans</i> | d) <i>Candida albicans</i> |
- (v) The types of medically important fungal infection are
- | | |
|------------------------|-------------------------|
| a) Superficial mycoses | b) Subcutaneous mycoses |
| c) Systemic Mycoses | d) All of these |
- (vi) The following is an example of Dimorphic fungi
- | | |
|-----------------------------------|----------------------------------|
| a) <i>Cryptococcus neoformans</i> | b) <i>Histoplasma capsulatum</i> |
| c) <i>Mucor racemosus</i> | d) <i>Aspergillus niger</i> |
- (vii) State which of thr following is the most correct statement regarding the Deuteromycetes also known as fungi imperfecti
- | | |
|---|--|
| a) They are the causative agent of subcutaneous mycoses | b) The sexual reproduction method is not clearly known |
| c) They produce basidiospores through the | d) None of the above |

- asexual reproduction method
- (viii) The yeast *Saccharomyces cerevisiae* is most commonly used in the production of
- a) Wine
b) Orange juice
c) Cheese
d) Sausages
- (ix) State most common laboratory culture media for fungi from the following
- a) Sabouraud dextrose agar
b) Brain heart infusion agar
c) Thayer Martin medium
d) Cornmeal agar
- (x) One of the routine microscopic laboratory identification methods of the fungi is done by using
- a) 70% KOH mount
b) 50% H₂O₂
c) 10% KOH
d) Formalin
- (xi) Select all the true statements about the harmful fungi and their threat to be a deadly human pathogen in recent years
- a) Majority of animals and organisms die from deadly fungal pathogens
b) Drug resistance to fungal infection have increased
c) Fungal infection is increasingly becoming a worrisome agricultural threat
d) All of the above
- (xii) The WRONG statement on candidiasis is
- a) Isolation of *Candida* from blood does not always mean infection
b) Growth of 10⁵ C.F.U/ml urine is significant
c) Mycotic vaginitis in Saudi women is common
d) In infected tissue the fungi will be only budding yeast cells
- (xiii) The viral genome is packaged into a structure made of
- a) Protein
b) Lipid
c) Fat
d) Carbohydrate
- (xiv) Select the option that is the most common capsid shape of the virus
- a) Cube
b) Rod
c) Cone
d) Icosahedron
- (xv) The incubation period of Zika Virus is
- a) 3-14 days
b) 2-7 days
c) 10-15 days
d) None of the above

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Differentiate between Yeast & Mould (3)
3. Explain the procedure of sample processing for obtaining clinical samples for KOH preparation for fungus determination (3)
4. Illustrate the morphology of *Candida albicans* (3)
5. Explain the process of replication of retroviruses inside a host cell (3)
6. Justify the reasons as why RT PCR is more reproducible than classical PCR (3)

OR

- Justify the reasons contributing to the efficacy of Sandwich Elisa (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. State the causes & treatment procedure for Histoplasmosis (5)
8. Distinguish between Oospore & Ascospore with suitable diagrams (5)
9. Explain the procedure of bacteriophage Plaque Assay (5)
10. Explain the structure of a typical bacteriophage with diagram (5)
11. Illustrate the pathogenesis of HIV (5)
12. Compare & contrast between RT PCR and Rapid test for corona virus detection (5)

OR

- Justify the efficacy of RIA in the detection of Hepatitis A (5)
