

**Madhya Pradesh Medical Science University,  
Jabalpur  
MBBS Second Professional Examination June-  
2023  
Subject- Microbiology  
Paper- II (new scheme)**

Time: 3:00 Hours

Maximum Marks :100

- a) All questions are compulsory**
- b) Draw diagrams wherever necessary**
- c) Answers of Questions and Sub-questions must be written strictly according to serial order of question paper.**
- d) MCQ has to be answered in theory answer book**
- e) Please write MCQ answer neatly and in serial order with black or blue pen in brackets; for example: - 1. (a) 2. (c)**
- f) MCQ has to be answered only once, any kind of repetition or cutting or erasing or whitener will be considered as malpractice, such answers will not be counted in marks and action will be taken according to UFM rules of university.**
- g) Subjective answer should be answered in up to 30 words per marks. For example, if a question having 2 marks should answered in up to 60 marks.**

**Q1. Total MCQs: 10**

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1. The following are the specific tests for diagnosis of syphilis except.  $10 \times 1 = 10$

- (a) Treponema Pallidum Fluorescent Immobilization test (TPI)
- (b) Rapid Plasma Reagin Test (RPR)
- (c) Treponemal Antibody Absorption Test (FTA-ABS)
- (d) T. Pallidum Hemagglutination Test (TPHA)

2. Which of the following statements regarding interferon-gamma release assays is correct?

- (a) They are useful for evaluating immunocompromised patients for active tuberculosis.
- (b) They are performed using molecular probes that detect organism DNA.
- (c) They are used as alternatives to the tuberculin skin test to evaluate for latent tuberculosis.
- (d) They detect antigens present in all Mycobacterium species.

3. Vector for leishmaniasis:

- (a) Sandfly
- (b) Reduviid bugs
- (c) Tsetse fly
- (d) Anopheles mosquito

4. Which bacteria is called as Pfeiffer's bacillus?

- (a) Corynebacterium diphtheriae
- (b) Haemophilus influenzae
- (c) Bacillus anthracis
- (d) Pseudomonas aeruginosa

5. All of the following are true about rhinovirus, except:
- (a) More than 100 antigenic types have been identified
  - (b) Acid-labile
  - (c) Incubation period is 10-14 days
  - (d) Transmitted by respiratory route
6. Laboratory infections can be acquired when working with viruses unless good laboratory safety practices are followed. Which of the following is not a good biosafety practice?
- (a) Use of biosafety hoods
  - (b) Use of laboratory coats and gloves
  - (c) Avoidance of pipetting by mouth
  - (d) Flushing experimental waste down laboratory sink
7. The most effective way of preventing tetanus:
- (a) Hyperbaric oxygen
  - (b) Antibiotics
  - (c) Tetanus toxoid
  - (d) Surgical debridement and toilet
8. Which of following is correct about prions?
- (a) Destroyed by autoclaving at 121°C
  - (b) Long incubation period
  - (c) Immunogenic
  - (d) Nucleic acid present
9. All of the following statements regarding Mycoplasmas are correct except:
- (a) They are susceptible to B-lactam agents.
  - (b) They lack a cell wall.
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(c) They have an affinity for mammalian cell membranes.

(d) They can be cultivated in cell-free media.

10. All of the following parasites can cause encephalitis except.

(a) Acanthamoeba

(b) Entamoeba histolytica

(c) Toxoplasma gondii

(d) Naegleria

## Q2. Long Answer Questions

a. 65-year-old female diabetic patient admitted to the hospital with complaints of swelling in the arm with pus discharge. On physical examination, the local area was found to be red, warm and tender. The swelling has a feel of fluid filled when pressed. Pus was aspirated and was sent to microbiology. On microscopic examination, Gram positive cocci in clusters seen. Based on this history:

1. What is the most probable etiological agent?

Enumerate the bacterial agents causing this condition.

2. Discuss morphology & cultural characteristics of above organism.

3. List the virulence factors of this organism.

4. Briefly discuss the laboratory diagnosis.  $2 \times 20 = 40$

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b. Enumerate neurotropic viruses. Discuss the morphology, transmission & pathogenicity of Polio virus. Comment on immunoprophylaxis of Poliomyelitis.

### **Q3. Brief Answer Questions**

a. Laboratory diagnosis of infectious mononucleosis.

10 x 2 = 20

b. Laboratory diagnosis of leprosy.

c. Nocardiosis.

d. Mucocutaneous Candidiasis

e. Nonspecific urethritis

f. Nosocomial diarrhoea

### **Q4. Short Answer Questions**

a. Elek's gel precipitation test 6 x 05 = 30

b. Enumerate Virulence factors of Bordetella pertussis.

c. Draw a well labeled diagram of Influenza virus.

d. Enumerate etiological agents of acute encephalitis syndrome (AES)

e. Give reason why urine samples for culture should be processed as soon as possible after collection.

f. Enumerate culture media used for laboratory diagnosis of bacteremia.

g. Draw a well labeled diagram of Trophozoite of Trichomonas vaginalis

h. Enumerate the organisms with oncogenic potential.

- i. Enumerate infections caused by Herpes Simplex Virus.
- j. Enumerate agents of Superficial mycoses

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