

MICROBIOLOGY
PAPER- FIRST

Note: Attempt all questions.
Draw suitable diagrams (wherever necessary)

- Q. 2. Give reasons:** (1 x 4 = 04)
- a. The door of the hot air oven is not opened soon after the process is over.
 - b. Unfertilized eggs are found in stool in case of ascariasis but not in other parasitic infections.
 - c. In spite of large number of contributions by Louis Pasteur, he did not get the Nobel Prize.
 - d. VDRL test is nonspecific but still is a preferred test for syphilis, specially if one has been treated for it.
- Q. 3. Problem based question:** (1+1+1+1 = 04)
- A five year old village child presented to OPD with gross anemia, vague abdominal symptoms like abdominal bloating, nausea etc. Stool examination revealed a non bile stained ova and presence of occult blood.
- a. Name the most likely helminth causing the problem.
 - b. What is the infective form?
 - c. What are the causes for anemia in this case?
 - d. Make a diagram of the egg of this parasite.
- Q. 4. Write short notes on:** (2 x 4 = 08)
- a. Enriched media
 - b. Post kala-azar dermal leishmaniasis (PKDL)
 - c. Casoni's test
 - d. Log phase of bacterial growth
- Q. 5. (i) Enumerate different types of Ag-Ab reactions. Describe any one of them in detail with examples** (1+2+1=04)
- (ii) Enumerate the cestodes found in man. How will you differentiate *Taenia solium* from *Taenia saginata*?** (1+3=04)
- Q. 6. Write in brief about :** (2 x 4 = 08)
- a. Type IV hypersensitivity
 - b. Lab diagnosis of malaria
 - c. Secretory antibody
 - d. Draw a labeled diagram of larval stage of *Wuchereria bancrofti*

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, FEBRUARY/ MARCH - 2019
MICROBIOLOGY
PAPER - FIRST

[Time allotted: Three hours]

SET - B

[Max Marks: 40]

Q. 1. Multiple choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) ($\frac{1}{2} \times 16 = 08$)

1. Heat labile fluids are sterilized by:
 - a. Radiation
 - b. Filtration
 - c. Tyndallization
 - d. Ethylene oxide
2. Liquid paraffin is best sterilized by:
 - a. Autoclaving
 - b. Filtration
 - c. Radiation
 - d. Hot air oven
3. The host in whom sexual mode of reproduction takes place is called as:
 - a. Intermediate
 - b. Paratenic
 - c. Definitive
 - d. Transport
4. Infective form of *Entamoeba histolytica* is:
 - a. Quadri-nucleate cyst
 - b. Uninucleate cyst
 - c. Precystic form
 - d. Trophozoite
5. Largest pathogenic intestinal protozoa is:
 - a. *Entamoeba histolytica*
 - b. *Entamoeba coli*
 - c. *Giardia lamblia*
 - d. *Balantidium coli*
6. Chagas disease is caused by:
 - a. *Trypanosoma cruzi*
 - b. *Trypanosoma brucei*
 - c. *Trypanosoma rangeli*
 - d. *Leshmania braziliensis*
7. Cholangio carcinoma has been associated with:
 - a. *Clonorchis sinensis*
 - b. *Paragonimus westermani*
 - c. *Fasciola hepatica*
 - d. *Diphyllobothium latum*
8. Non sheathed microfilaria is:
 - a. *Loa loa*
 - b. *Wuchereria bancrofti*
 - c. *Mansonella ozzardi*
 - d. *Brugia malayi*
9. An example of killed vaccine is:
 - a. BCG
 - b. OPV
 - c. Pertusis
 - d. Tetanus
10. Most antibodies are contained in which protein fraction of serum:
 - a. Albumin
 - b. α globulin
 - c. β globulin
 - d. γ globulin
11. Idiotype determinants are located on:
 - a. Constant region of L chain
 - b. Constant region of H chain
 - c. Hypervariable region
 - d. Hinge region
12. Classical pathway of complement is activated by:
 - a. Antigen
 - b. Antibody
 - c. Ag-Ab complex
 - d. Any of the above
13. All of the following are enriched media **except**:
 - a. Blood agar
 - b. Chocolate agar
 - c. Loeffler's serum slope
 - d. Bile salt agar
14. Blood culture is **not** indicated in:
 - a. Endocarditis
 - b. Diphtheria
 - c. Meningitis
 - d. Typhoid
15. Father of Microbiology is:
 - a. Robert Koch
 - b. Louis Pasteur
 - c. Antony van Leeuwenhoek
 - d. Edward Jenner
16. The following pathogen does **not** satisfy the Koch's postulates:
 - a. *Clostridium tetani*
 - b. *Bacillus anthracis*
 - c. *Corynebacterium diphtheriae*
 - d. *Mycobacterium leprae*

MICROBIOLOGY
PAPER- SECOND

Note: Attempt all questions.
Draw suitable diagrams (wherever necessary)

- Q. 2. Give reasons:** (1 x 4 = 04)
- Widal test is not an ideal method of diagnosis in first week of enteric fever.
 - Salk vaccine does not provide herd immunity.
 - Viral RNA detection is the best tool for diagnosis of HIV during window period.
 - Reactive IgM antibody test specific for syphilis in neonatal serum confirms the diagnosis of congenital syphilis.
- Q. 3. Problem based question:** (1+1+1+1 = 04)
- A 35 year old woman from a rural area suffered from severe diarrhoea. On routine examination of faeces, the nature of the faeces was like rice water. Occult blood test was negative. She looked dehydrated and her serum sodium and chloride values were very low.
- What is the probable diagnosis?
 - What is the causative agent?
 - What laboratory tests will you suggest?
 - What finding do you expect in your suggested test?
- Q. 4. Write short notes on:** (2 x 4 = 08)
- Laboratory diagnosis of pulmonary tuberculosis
 - Escherichia coli* causing diarrhea
 - Candida albicans*
 - Post exposure prophylaxis for rabies
- Q. 5. (i) Classify hepatitis viruses. Write briefly on blood borne hepatitis viruses.** (2 + 2 = 04)
- (ii) What are dimorphic fungi? Give examples.** (2 + 2 = 04)
- Q. 6. Write in brief about:** (2 x 4 = 08)
- Differences between *pneumococcus* and *viridians streptococci*.
 - Antigenic shift and antigenic drift.
 - Differences between *trichophyton* and *epidermophyton*.
 - Differences between *orthomyxoviridae* and *paramyxoviridae*.

[Time allotted: Three hours]

SET - D

[Max Marks: 40]

Q. 1. Multiple choice questions (attempt all MCQs in the allotted first **15 minutes** in the OMR sheet) ($\frac{1}{2} \times 16 = 08$)

1. BCG vaccine is a:
 - a. Live attenuated preparation
 - b. Killed preparation
 - c. Toxoid preparation
 - d. Recombinant preparation
2. An example of artificial virus is:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Vaccinia virus
3. pH of SDA media is:
 - a. 5.4
 - b. 6.4
 - c. 7.4
 - d. 8.4
4. Characteristic of anaerobic bacteria is:
 - a. Foul smelling discharge
 - b. Failure to grow in aerobic media
 - c. Gas in tissue
 - d. All of the above
5. Which of the following species of *Aspergillus* produce black coloured colonies on SDA?
 - a. *Aspergillus fumigatus*
 - b. *Aspergillus niger*
 - c. *Aspergillus flavus*
 - d. None of the above
6. Scrub typhus is caused by:
 - a. *Rickettsia prowazekii*
 - b. *Rickettsia quintana*
 - c. *Orientia tsutsugamushi*
 - d. *Coxiella burnetii*
7. A positive tuberculin test is indicated by an area of induration of:
 - a. < 5 mm in diameter
 - b. 6 - 9 mm in diameter
 - c. \geq 10 mm in diameter
 - d. No induration
8. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
9. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
10. Q fever is caused by:
 - a. *Rickettsia prowazekii*
 - b. *Rickettsia quintana*
 - c. *Rickettsia akari*
 - d. *Coxiella burnetii*
11. Which of the following bacteria produces medusa head colony on nutrient agar?
 - a. *Streptococcus pyogenes*
 - b. *Staphylococcus aureus*
 - c. *Viridans streptococci*
 - d. *Bacillus anthracis*
12. Which of the following fungi is capsulated?
 - a. *Cryptococcus neoformans*
 - b. *Candida albicans*
 - c. *Aspergillus niger*
 - d. *Candida tropicalis*
13. What is the shape of the rabies virus?
 - a. Spherical
 - b. Polygonal
 - c. Bullet shaped
 - d. Tubular
14. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Tubular
 - d. None of the above
15. Which of the following dermatophytes can infect hair, skin and nail?
 - a. *Trichophyton*
 - b. *Microsporum*
 - c. *Epidermophyton*
 - d. None of the above
16. Which of the following fungi is **not** a mold?
 - a. *Aspergillus*
 - b. *Penicillium*
 - c. *Mucor*
 - d. *Cryptococcus*

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SET - D

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 - d. *Cryptococcus*

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Draw suitable diagrams wherever necessary.

- Q. 2. Give reasons:** (1 x 4 = 04)
- Gram negative bacteria are stained pink not purple.
 - Malaria is transmitted by the bite of female anopheles mosquito & not by the male.
 - Microfilaria shows nocturnal periodicity.
 - Visceral Leishmaniasis is also known as Kala azar.
- Q. 3. Problem based question:** (1 x 4 = 04)
- A 50 years old farmer was brought to the emergency department with shortness of breath and tightness in the chest. He had a history of being stung by bees.
- What is the clinical diagnosis?
 - Name two mediators of the reaction.
 - Which antibody is responsible for this condition?
 - How will you manage the case?
- Q. 4. Write short notes on:** (2 x 4 = 08)
- Factors affecting antigenicity
 - Contributions of Robert Koch in Microbiology
 - Gram negative cell wall
 - Larva migrans
- Q. 5. (i) Name the malarial parasites found in Man. Describe the life cycle of malaria parasite. What is cerebral malaria?** (04)
- (ii) What are the methods of gene transfer in bacteria? Describe restricted transduction.** (04)
- Q. 6. Write in brief about:** (2 x 4 = 08)
- Enumerate differences between primary and secondary immune response (in tabular form).
 - Give differences among exotoxins and endotoxins (in tabular form).
 - Make a labelled diagram of autoclave.
 - Depict the life cycle of hookworm by arrow diagrams only.

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, MAY/JUNE-2019

MICROBIOLOGY
PAPER – FIRST

[Time allotted: Three hours]

SET - B

[Max Marks: 40]

Q. 1. Multiple choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) ($\frac{1}{2} \times 16 = 08$)

1. Antibiotics that inhibit cell wall synthesis:
 - a. Penicillin
 - b. Ethambutol
 - c. Polymyxin
 - d. Aztreonam
2. Number of proteins in complement system are:
 - a. 7
 - b. 5
 - c. 9
 - d. 11
3. Which antibody crosses placenta?
 - a. IgG
 - b. IgA
 - c. IgM
 - d. IgD
4. Arthus reaction is example of which type of hypersensitivity?
 - a. Type-I
 - b. Type-III
 - c. Type-II
 - d. Type-IV
5. Oils are best sterilized by:
 - a. Hot air oven
 - b. Filtration
 - c. Autoclave
 - d. Microwaving
6. Concentration of IgE in serum is:
 - a. 0.04 mg/ml
 - b. 0.0004 mg/ml
 - c. 0.004 mg/ml
 - d. 0.00004 mg/ml
7. Pseudopodia is organ of locomotion in:
 - a. *Trichomonas vaginalis*
 - b. *Entamoeba histolytica*
 - c. *Escherichia coli*
 - d. *Giardia lamblia*
8. Larval form of *Echinococcus granulosus* is seen in:
 - a. Man
 - b. Fox
 - c. Dog
 - d. Wolf
9. Which form of *Leishmania donovani* is seen in man?
 - a. Promastigote
 - b. Trypomastigote
 - c. Amastigote
 - d. None of the above
10. Which of the following may be transmitted congenitally?
 - a. *Toxoplasma gondii*
 - b. *Cryptosporidium parvum*
 - c. *Trichinella spiralis*
 - d. *Balantidium coli*
11. B cells that produce large amount of antibodies are called:
 - a. Memory cells
 - b. T cells
 - c. Plasma cells
 - d. Killer cells
12. Transformation was first shown in:
 - a. *Salmonella typhi*
 - b. *Pneumococcus*
 - c. *E. coli*
 - d. *Gonococcus*
13. Hot air oven is used for the sterilization of:
 - a. All glass syringes
 - b. Swab sticks
 - c. Oils
 - d. All of the above
14. Test employing complement is:
 - a. VDRL test
 - b. Widal test
 - c. TPI
 - d. All of the above
15. Lens antigen of the eye is:
 - a. Neo Ag
 - b. Sequestered Ag
 - c. Cross reacting Ag
 - d. All of the above
16. The resolving power of the light microscope is:
 - a. 25 nm
 - b. 25 Angstrom
 - c. 250 nm
 - d. None of the above

MICROBIOLOGY
PAPER- SECOND

Note: Attempt all questions.
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- Q. 2. Give reasons:** (1 x 4 = 04)
- Why streptococci are arranged in chains not in clusters.
 - Widal test for the diagnosis of enteric fever is done after 1st week of illness.
 - We have been able to eradicate polio from India but not Japanese B encephalitis.
 - Dermatophytes usually infect skin, hair & nails only and not deeper tissue.
- Q. 3. Problem based question:** (1 x 4 = 04)
- Village boy about 10 years old was brought to hospital with difficulty in breathing but his lungs were clear.
- What is your clinical diagnosis?
 - Which test is likely to confirm the diagnosis within 30 min?
 - What eye complication may be seen in the above condition?
 - Name the selective medium used for isolation of the causative organism.
- Q. 4. Write short notes on:** (2 x 4 = 08)
- Naegler's reaction
 - Atypical mycobacteria
 - Germ tube test
 - Window period
- Q. 5. (i)** Briefly describe the pathogenesis and the various vaccines available against Rabies. (04)
- (ii)** Briefly describe the various stages of syphilis and the advantages and disadvantages of VDRL test. (04)
- Q. 6. Differentiate between following in tabular form:** (2 x 4 = 08)
- Myxo and paramyxo viruses
 - Hepatitis A and hepatitis B
 - Trichophyton, microsporium and epidermatophyton
 - Mycoplasma and L forms of bacteria.

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, MAY/JUNE-2019

MICROBIOLOGY
PAPER - SECOND

[Time allotted: Three hours]

SET - B

[Max Marks: 40]

Q. 1. Multiple choice questions (attempt all MCQs in the allotted first 15 minutes in the OMR sheet) (½ x 16= 08)

1. Anti-rabies vaccine is prepared from:
 - a. Street virus
 - b. Fixed virus
 - c. Live virus
 - d. Wild virus
2. During the window period of patient with AIDS, best diagnostic test is:
 - a. ELISA
 - b. Western blot
 - c. Rapid test
 - d. RT-PCR
3. Which is known as Australia antigen?
 - a. HBsAg
 - b. HBeAg
 - c. HBcAg
 - d. HBV DNA
4. Example for fungus having branching, aseptate hyphae are all **except**:
 - a. Rhizopus
 - b. Absidia
 - c. Penicillium
 - d. Mucor
5. Which is the post streptococcal sequelae?
 - a. Acute rheumatic fever
 - b. Cellulitis
 - c. Pharyngitis
 - d. Impetigo
6. Which is not a property of *S. pneumoniae*?
 - a. Bile solubility
 - b. Animal pathogenicity in mice
 - c. Growth in presence of 40% bile
 - d. Optochin sensitivity
7. *Staphylococcus aureus* causes vomiting in 6-8 hours. This mechanism of action is by:
 - a. Stimulation of cAMP
 - b. Vagal stimulation
 - c. Stimulation of cGMP
 - d. Acts through ganglioside GM receptor
8. All of the following are causative agents of NGU **except**:
 - a. *Chlamydia trachomatis*
 - b. *Mycoplasma hominis*
 - c. *Candida albicans*
 - d. *Meningococci*
9. Production of early metachromatic granules can be seen best in which of the following media:
 - a. Nutrient agar
 - b. Chocolate agar
 - c. Loeffler's serum slope
 - d. Potassium tellurite agar
10. Characteristic of anaerobic bacteria is:
 - a. Foul smelling discharge
 - b. Fail to grow in aerobic media
 - c. Gas in tissue
 - d. All of the above
11. A positive tuberculin test is indicated by an area of induration of:
 - a. <5 mm in diameter
 - b. 6-9 mm in diameter
 - c. ≥ 10 mm in diameter
 - d. any area is significant
12. Bipolar staining is characteristic of:
 - a. *Yersinia petis*
 - b. *Shigella*
 - c. *Klebsiella*
 - d. *Proteus*
13. Which of the following media can be used as transport medium for vibrios?
 - a. Selenite F broth
 - b. Nutrient broth
 - c. Tetrathionate broth
 - d. Venkatraman-Ramakrishnan medium
14. Weil's disease is caused by
 - a. *Leptospira interrogans*
 - b. *Borrelia recurrentis*
 - c. *Treponema carateum*
 - d. *Treponema pallidum*
15. Which of the following Paramyxoviruses has a surface glycoprotein lacking haemagglutinin activity?
 - a. Measles virus
 - b. Mumps virus
 - c. Para influenza virus Type 1
 - d. Respiratory syncytial virus
16. Not true about Salk vaccine:
 - a. Expensive than OPV
 - b. Not useful in epidemics
 - c. Contraindicated in low immunity
 - d. Boosters does are required