

M.B.B.S. 2ND PROF. EXAMINATION, JANUARY- 2013
MICROBIOLOGY
PAPER FIRST

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all questions. Question should be answered as per the sequence given in the question paper.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions – separate sheet given

(½ x 16=08)

Q. 2. A 20 year old male comes to the medicine OPD with history of frequent passage of foul smelling liquid stools along with blood and mucus. This is associated with abdominal cramps and tenesmus. (1+3+2+2 = 08)

- a. What is the commonest protozoal cause of this clinical condition?
- b. Describe its life cycle using diagrams.
- c. How will you diagnose this condition in the laboratory?
- d. Enumerate the complications of this protozoal infection and describe its pathogenesis.

Q. 3. Define sterilization and disinfection. Describe various methods of steam sterilization.

(3+5 = 08)

Q. 4. Write short notes on:

(4 x 2 = 08)

- a. Bacterial plasmids
- b. Laboratory diagnosis of lymphatic filariasis

Q. 5. Briefly comment upon:

(2 x 4 = 08)

- a. Classification of hypersensitivity reactions
- b. Mechanisms of autoimmunity
- c. Differences between active and passive immunity
- d. T lymphocytes

M.B.B.S. 2ND PROF. EXAMINATION, JANUARY- 2013

MICROBIOLOGY

PAPER FIRST - MCQ

SET- D

Time allotted for MCQ – 15 minutes

Q. 1. Multiple Choice questions (Encircle the single best response)

(½ x 16=08)

A-5 D-9
C-13 B-3

1. Heaviest class of antibody is:
 - a. IgG
 - b. IgM
 - c. IgA
 - d. IgE
2. Which class of immunoglobulins is present in secretions?
 - a. IgG
 - b. IgM
 - c. IgA
 - d. IgE
3. Which of the following method is used for disposal of Bio-Medical waste?
 - a. Inspissation
 - b. Incineration
 - c. Tyndallization
 - d. Radiation
4. The Widal test is a type of:
 - a. Precipitation reaction
 - b. Complement fixation test
 - c. Agglutination reaction
 - d. Immunofluorescence
5. Serum for preparing Loeffler's serum slope is sterilized by:
 - a. Filtration
 - b. Tyndallization
 - c. Autoclaving
 - d. Radiation
6. Simple light microscope was invented by:
 - a. Robert Hooke
 - b. Robert Koch
 - c. Anthony Van Leeuwenhoek
 - d. Louis Pasteur
7. Smallest Intestinal nematode is:
 - a. Trichinella spiralis
 - b. Trichuris trichura
 - c. Necator americanus
 - d. Enterobius vermicularis
8. All are flagellated protozoans EXCEPT:
 - a. Trichomonas vaginalis
 - b. Giardia lamblia
 - c. Balantidium coli
 - d. Leishmania donovani
9. 'Chinese liver fluke' is the common name for:
 - a. Paragonimus westermanii
 - b. Fasciola hepatica
 - c. Fasciolopsis buski
 - d. Gastrodiscoides hominis
10. Bile stained eggs in stool are of all EXCEPT:
 - a. Trichuris trichura
 - b. Taenia saginata
 - c. Ascaris lumbricoides
 - d. Hymenolepis nana
11. All are selective media EXCEPT:
 - a. Mannitol Salt agar
 - b. Lowenstein Jensen
 - c. Bile Salt agar
 - d. Selenite F broth
12. Casoni's test is carried out for the diagnosis of:
 - a. Visceral leishmaniasis
 - b. Hydatid disease
 - c. Neurocysticercosis
 - d. Ascariasis
13. Which of the following helminthic eggs is the heaviest?
 - a. Fertilized egg of Ascaris lumbricoides
 - b. Egg of hookworm
 - c. Egg of Hymenolepis nana
 - d. Unfertilized egg of Ascaris lumbricoides
14. The parasitic infection that has been recently eradicated from India is:
 - a. Taeniasis
 - b. Hydatid disease
 - c. Filariasis
 - d. Dracunculosis
15. An intermediate host is not required to complete the life cycle of:
 - a. H. nana
 - b. D. latum
 - c. T. solium
 - d. E. granulosus
16. All of the following are oviparous EXCEPT:
 - a. Ancylostoma duodenale
 - b. Ascaris lumbricoides
 - c. Trichinella spiralis
 - d. Trichuris trichiura

M.B.B.S. 2ND PROF. EXAMINATION, JANUARY-2013
MICROBIOLOGY
PAPER SECOND

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all questions. Question should be answered as per the sequence given in the question paper.
 Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions – separate sheet given

(½ x 16 = 8)

Q. 2. Problem based question:

(1+1+3+3 = 8)

A 25 years old women was admitted to the hospital with fever (100° F.); jaundice, nausea and vomiting. On examination, her liver is enlarged and tender. The serum test shows total bilirubin of 5 mg/dl and elevated transaminases. She received the complete course of the hepatitis B vaccine 6 years ago, but has not had the hepatitis A vaccine. The results of her hepatitis serologies are as follows: HAV-IgM- negative, HAV-IgG- positive, HBsAg- negative, HBsAb- positive, HBcAb – negative, HCV-Ab – positive.

- What is the possible hepatitis virus responsible for the condition?
- What is the most likely method of acquiring this infection?
- What are the complications of this condition?
- How can you prevent this infection?

Q. 3. Describe the morphology of HIV and the laboratory diagnosis of HIV infection.

(2+6 = 8)

Q. 4. Write short notes on:

- Post exposure prophylaxis of Rabies.
- Opportunistic infections

(4 x 2 = 8)

Q. 5. Write briefly about:

- Bacteria causing urinary tract infection
- Dimorphic fungi
- Candidiasis
- El Tor Vibrio

(2 x 4 = 8)

M.B.B.S. 2ND PROF. EXAMINATION, JANUARY- 2013**MICROBIOLOGY
PAPER SECOND- MCQ****Time allotted for MCQ – 15 minutes****SET-B****Q. 1. Multiple Choice questions (Encircle the single best response)****(½ x 16=08)**

1. Pyoderma or impetigo may lead to:
 - a. Rheumatic fever
 - b. Glomerulonephritis
 - c. Enlarged prostate
 - d. Fibroadenosis of breast
2. False about micrococci:
 - a. Occur in pair, tetrad or irregular cluster
 - b. Catalase positive
 - c. Smaller in size than staphylococci
 - d. In culture form small colonies
3. True about viruses:
 - a. Grow in inanimate media
 - b. Ribosomes are present
 - c. Sensitive to interferon
 - d. Multiply by binary fission
4. Cowdry type B inclusion bodies are found in:
 - a. Adenovirus
 - b. Herpes virus
 - c. Yellow fever
 - d. Molluscum contagiosum
5. True about inclusion bodies is:
 - a. No acidophilic inclusion body is known
 - b. Basophilic inclusion body is unheard
 - c. Negri bodies are intracytoplasmic and seen in rabies virus infection
 - d. Molluscum bodies are intranuclear
6. DNA viruses synthesize their components in host nucleus EXCEPT:
 - a. Small pox
 - b. Adeno
 - c. Herpes
 - d. Papova
7. Group B coxsackie virus produces:
 - a. Generalized myositis
 - b. Myocarditis
 - c. Flaccid paralysis
 - d. All of the above
8. Yeast like fungus is:
 - a. *Candida albicans*
 - b. *Cryptococcus neoformans*
 - c. *Trichophyton*
 - d. *Microsporum*
9. Importance of differentiating actinomycotic mycetoma and fungal mycetoma is:
 - a. Actinomycotic mycetoma usually responds to antibiotics
 - b. Fungal mycetoma usually responds to antibiotics
 - c. Actinomycotic mycetoma requires amputation of the infected part of body
 - d. None of the above
10. False about mycotoxin:
 - a. Produced by fungi only
 - b. Severe damage to liver, kidney and bone marrow may be caused
 - c. Aflatoxin in one of the mycotoxin
 - d. None of the above
11. Reynolds-Braude phenomenon observed in *Candida albicans* includes:
 - a. Ability to form germ tube
 - b. Germ tube is formed in 2-3 hours
 - c. Incubation at 37° C
 - d. All of the above
12. Fungal ball is seen in:
 - a. *Penicillium*
 - b. *Blastomyces*
 - c. *Aspergillus*
 - d. *Histoplasma*
13. Advantage of tuberculin test are:
 - a. Diagnosis of active infection in infants
 - b. Susceptibility of BCG vaccination infection
 - c. Indication of successful vaccination
 - d. All of the above
14. Significant bacteriuria indicates presence of bacteria (single species):
 - a. 10³/ml of urine
 - b. 10⁴/ml of urine
 - c. 10⁵/ml of urine
 - d. 10⁶/ml of urine
15. Satellitism is used to identify:
 - a. *H. influenzae*
 - b. *M. tuberculosis*
 - c. *Bacillus anthracis*
 - d. *Yersinia pestis*
16. Stain used to demonstrate *Borrelia*:
 - a. Silver impregnation method
 - b. PAS staining
 - c. AFB stain
 - d. Giemsa

M.B.B.S. SECOND PROF. EXAMINATION, JUNE/JULY - 2014
MICROBIOLOGY
PAPER - SECOND

[Time allotted: Three hours]

Note: Attempt all Questions.

[Max Marks: 40]

Draw suitable diagrams wherever necessary.

- Q. 1.** Multiple choice questions- separate sheet given ($\frac{1}{2} \times 16 = 08$)
- Q. 2.** Give Reasons: (1 x 4 = 04)
- HIV infection is not transmitted by the bite of mosquito.
 - Widal test is done in second week of illness not in first week.
 - Centre of pneumococcal colonies is depressed.
 - Streptococcus pyogenes can cause rheumatic fever but Staphylococcus does not.
- Q. 3.** Fill in the blanks: (1 x 4 = 04)
- Virulence factors of Staphylococcus aureus are _____ and _____
 - Non suppurative complications of Streptococcus pyogenes are _____ and _____
 - Food poisoning is caused by _____ and _____
 - Indole test is positive in _____ and _____
- Q. 4.** Write in brief about: (2 x 4 = 08)
- Diagnosis of HIV infection in the window period.
 - Antigenic variation in influenza virus.
 - Polio vaccines
 - Modes of transmission of Hepatitis C virus.
- Q. 5. (i)** Enumerate causative agents of urinary tract infection. What do you mean by significant bacteriuria? What advice would you give to a patient of urinary tract infection to ensure proper collection of sample for culture examination? (1+1+2= 04)
- Q. 5. (ii)** Problem based question: (1+1+1+1 = 04)
- A 30 year old man with complaints of passing loose stools for past 3 days reports to medical OPD.
- What is your provisional clinical diagnosis?
 - Name the bacterial pathogens which can cause this disease.
 - Write briefly about the pathogenesis.
 - Discuss laboratory diagnosis of the disease.
- Q. 6.** Write short notes on: (2 x 4 = 08)
- Laboratory diagnosis of Cryptococcal meningitis.
 - Dermatophytes.
 - Antigenic shift of influenza virus.
 - Fungal skin infections

M.B.B.S. SECOND PROF. EXAMINATION, JUNE/JULY - 2014**MICROBIOLOGY****PAPER – SECOND (MCQ)****SET - D****Time allotted for MCQ – 20 minutes****Q. 1. Multiple Choice questions (Encircle the single best response)****(0.5 x 16 = 08)**

1. Which of the following diseases is NOT vector-borne?
 - a. Epidemic typhus
 - b. Endemic typhus
 - c. Rocky Mountain Spotted Fever
 - d. Q Fever
2. CAMP test is positive in Group ----- Streptococcus:
 - a. B
 - b. D
 - c. F
 - d. H
3. Aflatoxin is produced by:
 - a. Aspergillus flavus
 - b. Aspergillus fumigatus
 - c. Aspergillus niger
 - d. Aspergillus terreus
4. Chancroid is caused by:
 - a. Hemophilus influenzae
 - b. Hemophilus ducreyi
 - c. Hemophilus haemolyticus
 - d. Hemophilus parainfluenzae
5. Metachromatic granules are observed in:
 - a. Mycobacterium tuberculosis
 - b. Chlamydia trachomatis
 - c. Mycobacterium leprae
 - d. Corynebacterium diphtheriae
6. Medusa head colonies are characteristic of:
 - a. Bacillus anthracis
 - b. Clostridium perfringens
 - c. Staphylococcus aureus
 - d. Clostridium tetani
7. Which of the following conditions is NOT associated with "Biological False Positive" reactions?
 - a. Pregnancy
 - b. SLE
 - c. Relapsing Fever
 - d. Food Poisoning
8. Which of the following fungi does NOT infect the hair?
 - a. Epidermophyton
 - b. Trichophyton
 - c. Microsporum
 - d. All of the above
9. 'Shick test' is attributed to:
 - a. Diagnosis of diphtheria
 - b. Prognosis of diphtheria
 - c. Susceptibility to diphtheria
 - d. Carriers of diphtheria
10. Which of the following is cultivable in vitro?
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis C virus
 - d. Hepatitis D virus
11. Croup is caused by:
 - a. Influenza virus
 - b. Parainfluenza virus
 - c. Respiratory syncytial virus
 - d. Rubella virus
12. Mycobacterium marinum is a:
 - a. Photochromogen
 - b. Scotochromogen
 - c. Non-chromogen
 - d. Rapid grower
13. "Drumstick appearance" is associated with:
 - a. Clostridium septicum
 - b. Clostridium perfringens
 - c. Clostridium botulinum
 - d. Clostridium tetani
14. Catalase test is used to differentiate between:
 - a. Staphylococcus & Streptococcus
 - b. Staphylococcus aureus & Staphylococcus epidermidis
 - c. Pneumococcus & Streptococcus
 - d. Streptococcus pyogenes & Streptococcus agalactiae
15. Food poisoning associated with constipation is seen with:
 - a. Clostridium botulinum
 - b. Bacillus cereus
 - c. Staphylococcus aureus
 - d. Clostridium perfringens
16. Germ tube test is positive in:
 - a. Candida glabrata
 - b. Candida tropicalis
 - c. Candida krusei
 - d. Candida albicans

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2014

MICROBIOLOGY

PAPER – SECOND

Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q 1. Multiple choice questions- separate sheet given

($\frac{1}{2} \times 16 = 08$)

Q 2. Give Reasons:

(1 x 4 = 04)

- Streptococcus pyogenes infection leads to rheumatic fever. But Streptococcus pyogenes cannot be isolated in culture from affected tissues, even in the acute stage. Why is it so?
- Please explain why Haemophilus influenzae can grow on chocolate agar, but not on blood agar.
- An elderly gentleman develops herpes zoster. His grandson plays with him and comes down with chickenpox after two weeks. How did this happen?
- Patients receiving broad-spectrum antibacterial medicines develop thrush, which is a superficial infection of the oral and pharyngeal mucous membranes caused by Candida albicans. Why does this happen?

(1 x 4 = 04)

Q 3. Fill in the blanks:

- _____ is a fungus that often causes disease in patients of AIDS.
- _____ and _____ are two viruses that can cause leukemia and / or lymphoma.
- _____ is an attenuated strain of Salmonella typhi that can be used in oral vaccine.
- Streptococcus pyogenes is _____ haemolytic, while Streptococcus pneumoniae is _____ haemolytic.

(2 x 4 = 08)

Q 4. Write in brief about:

- The approach to post-exposure prophylaxis of rabies
- The three epidemiological patterns of dermatophyte infections (From where do the pathogens reach the human body?)
- Steps in the development of primary pulmonary tuberculosis (start from inhaling respiratory droplets or droplet nuclei)
- Laboratory diagnosis of gonorrhoea (start from which specimen to collect)

Q 5. (i) Match the toxins or virulence factors to their corresponding pathogen:

(04)

1. Polysaccharide capsule; inhibits phagocytosis	
2. Binds to GM1 ganglioside receptor; increases CAMP level in host cell cytoplasm indirectly	
3. Lipooligosaccharide in the outer membrane; shed in blebs	
4. Edema factor and lethal factor	
5. Ability to survive inside macrophages	
a) <i>Vibrio cholerae</i>	b) <i>Salmonella spp.</i>
e) <i>Bacillus anthracis</i>	c) <i>Neisseria meningitidis</i>
	d) <i>Streptococcus pneumoniae</i>

Q 5 (ii) Problem based question:

(1 x 4 = 04)

There is an outbreak of diarrhoea in the slum behind our campus for the past one week. Most of the patients are complaining of frequent passage of small volume stools with blood and mucus, along with abdominal cramps. Some of the affected children also have fever. About 25% of all inhabitants of slum are affected.

- What is the most likely pathogen?
- Name another pathogen that can cause similar symptoms.
- What specimen will you collect for laboratory diagnosis and how will you transport it?
- What would be the best culture medium to isolate it?

(2 x 4 = 08)

Q 6. Write short notes on:

- Clinical manifestations of herpes simplex virus infection
- Laboratory diagnosis of enteric fever (just mention the steps and name the media or tests)
- Fungal skin infections
- Laboratory diagnosis of syphilis (just mention the steps and name the tests and their principle)

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2014

MICROBIOLOGY

PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutes

Set - B

Q. 1. Multiple Choice questions ((Darken the single best response in OMR sheet) (0.5 x 16 = 08)

1. Which of the following viruses has an RNA genome?
 - a. Cytomegalovirus
 - b. Parvovirus
 - c. Varicella-Zoster virus
 - d. Poliovirus
2. Which of the following viruses is oncogenic in human beings?
 - a. Parvovirus
 - b. Epstein-Barr virus
 - c. Rhinovirus
 - d. Hepatitis A virus
3. Which of the following fungi is a thermal dimorphic pathogen, i.e., it has one shape at 25°C and another shape at 37°C?
 - a. Histoplasma capsulatum
 - b. Cryptococcus neoformans
 - c. Candida albicans
 - d. Candida tropicalis
4. Which of the following is true about Corynebacterium diphtheriae?
 - a. It grows inside macrophages
 - b. It grows on nutrient agar
 - c. It produces an exotoxin
 - d. A live attenuated vaccine provides immunity against the disease
5. Which of the following causes diarrhoea without damaging the physical integrity of the intestinal epithelium?
 - a. Vibrio cholerae
 - b. Shigella dysenteriae
 - c. Campylobacter jejuni
 - d. Enteroinvasive E. coli
6. Which of the following organisms produces a toxin that affects peripheral nerves?
 - a. Clostridium tetani
 - b. Clostridium botulinum
 - c. Clostridium perfringens
 - d. Clostridium histolyticum
7. Foul-smelling pus is typically found in infections caused by
 - a. Staphylococcus aureus
 - b. Streptococcus pyogenes
 - c. Bacillus anthracis
 - d. Bacteroides fragilis
8. Which of the following viruses stays latent in the dorsal root ganglia of sensory nerves?
 - a. Cytomegalovirus
 - b. Varicella-zoster virus
 - c. Rabies virus
 - d. Poliovirus
9. Rabies can be mistaken for which of the following diseases?
 - a. Parkinson's disease
 - b. Pure neuritic leprosy
 - c. Guillain-Barre syndrome
 - d. Neurosyphilis
10. Salmonella typhi can set up chronic infections in:
 - a. Dorsal root ganglia of sensory nerves
 - b. Anterior horn cells of the spinal cord
 - c. Gall bladder
 - d. Adrenal cortex
11. Which of the following works equally well as a transport and enrichment medium for Vibrio cholerae?
 - a. Stuart's transport medium
 - b. Amies' transport medium
 - c. Thiosulphate Citrate Bile-salt Sucrose Agar
 - d. Alkaline peptone water
12. Which of the following is a very important cause of urethritis and cervicitis?
 - a. Neisseria lactamica
 - b. Chlamydia trachomatis
 - c. Campylobacter jejuni
 - d. Streptococcus pneumoniae
13. Which of the following fungi is a commensal on mucous membranes?
 - a. Trichophyton rubrum
 - b. Sporothrix schenckii
 - c. Candida albicans
 - d. Pityrosporum ovale
14. A 32-year old woman who is 10 weeks pregnant presents to the obstetrics clinic for prenatal care. She was treated for syphilis seven years ago. The results of serologic tests for syphilis are as follows:
Non treponemal test (RPR) : Non-reactive and
Treponemal test (TPHA) : Reactive
Which of the following statements is most accurate?
 - a. The baby is at high risk for congenital syphilis
 - b. The mother needs a lumbar puncture and a VDRL test for her CSF to rule out neurosyphilis
 - c. The mother needs to be treated again for syphilis
 - d. The mother's previous treatment for syphilis was effective and the baby is not at risk
15. Listeria monocytogenes shows which of the following characteristics?
 - a. It can grow in a refrigerator at 4°C
 - b. It cannot survive inside phagocytes
 - c. It is catalase-negative
 - d. It is a gram-negative coccus
16. Which of the following fungi behaves as an opportunistic pathogen, i.e., it seldom infects healthy people?
 - a. Aspergillus fumigatus
 - b. Trichophyton rubrum
 - c. Histoplasma capsulatum
 - d. Epidermophyton floccosum

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY -2014
MICROBIOLOGY
PAPER – FIRST

[Time allotted: Three hours]**[Max Marks: 40]****Note:** Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given ($\frac{1}{2} \times 16 = 08$)

Q. 2. Give Reasons: (1 x 4 = 04)

- a. L-forms of bacteria may produce chronic infections in host.
- b. Sabin vaccine cannot be administered in immune-compromised host.
- c. The secondary immune response to an antigen is faster than the primary immune response.
- d. Sterilisation by ~~Infra-red~~ ^{Gamma} radiation is called cold sterilization.

Q. 3. Fill in the blanks: (1 x 4 = 04)

- a. Post Kalazar dermal leishmaniasis is a sequel infection with _____.
- b. Most common organ involved in extra intestinal amoebiasis is _____.
- c. Holding time and temperature for sterilization of glasswares in hot air oven is _____ and _____.
- d. The smallest tapeworm infecting man is _____.

Q. 4. Write in brief about: (2 x 4 = 08)

- a. Major histocompatibility complex.
- b. Genetic mechanism of drug resistance in bacteria.
- c. Draw and label the life cycle of *Ascaris lumbricoides*.
- d. Bacterial growth curve.

Q. 5. (i) Define hypersensitivity. Classify hypersensitivity reactions. Give 2 examples of delayed hypersensitivity reactions. (04)

Q. 5. (ii) Problem based question: (1 x 4 = 04)

A 35 years old female patient coming to the OPD with abdominal discomfort and generalized weakness. She also has a history of working barefooted in the field. On examination she was found to have Hypochromic Microcytic anaemia.

- a. What is the probable diagnosis?
- b. What is the mode of infection?
- c. What is the infective form of the causative agent?
- d. What is the treatment of this condition?

Q. 6. Write short notes on: (2 x 4 = 08)

- a. Type I hypersensitivity
- b. IgM antibody
- c. Bacterial spore
- d. Opportunistic amoeba

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY -2014**MICROBIOLOGY****PAPER – FIRST (MCQ)****Time allotted for MCQ – 20 minutes****Set - C****Q. 1. Multiple Choice questions ((Darken the single best response in OMR sheet)****(0.5 x 16 = 08)**

1. Tail tip contains two nuclei in case of microfilaria of:
 - a. Wuchereria bancrofti
 - b. Loa loa
 - c. Brugia malayi
 - d. Oncocerca volvulus
2. Larval form of Taenia solium is seen in:
 - a. Pig
 - b. Cattle
 - c. Dog
 - d. Cat
3. Which is the definitive host of Echinococcus granulosus?
 - a. Dog
 - b. Sheep
 - c. Cattle
 - d. Man
4. Largest trematode is:
 - a. Fasciola hepatica
 - b. Fasciolopsis busci
 - c. Clonorchis sinensis
 - d. Schistosoma hematobium
5. Promastigote form of Leishmania donovani is seen in:
 - a. Red blood cells
 - b. Culture media
 - c. Hepatocytes
 - d. Cells of Reticuloendothelial system
6. Which part of the bacteria does penicillin act on?
 - a. Ribosome
 - b. Cell wall
 - c. Nucleus
 - d. Cell membrane
7. The Widal test is a type of:
 - a. Precipitation reaction
 - b. Agglutination reaction
 - c. Complement reaction
 - d. Immunofluorescence
8. The organ of adhesion of bacteria is:
 - a. Capsule
 - b. Slime
 - c. Flagella
 - d. Fimbriae
9. Gloves are discarded in:
 - a. Yellow bin
 - b. Blue bin
 - c. Green bin
 - d. Metal container
10. Which class of immunoglobulins can cross the placenta?
 - a. IgG
 - b. IgM
 - c. IgE
 - d. IgA
11. Which of the following media is sterilized by inspissation?
 - a. Blood agar
 - b. Peptone water
 - c. Loeffler's serum slope
 - d. MacConkey agar
12. Sharp instruments are discarded in:
 - a. Yellow bin
 - b. Blue bin
 - c. Green bin
 - d. Metal container
13. Anaphylactic reaction is mediated by which class of immunoglobulin?
 - a. IgM
 - b. IgE
 - c. IgA
 - d. IgG
14. Heaviest class of antibody is:
 - a. IgG
 - b. IgM
 - c. IgE
 - d. IgA
15. Which class of immunoglobulins is present in secretions?
 - a. IgG
 - b. IgM
 - c. IgE
 - d. IgA
16. Which of the following nematodes lay unsegmented eggs?
 - a. Necator americanus
 - b. Trichuris trichura
 - c. Strongyloides stercoralis
 - d. Trichinella spiralis

M.B.B.S. SECOND PROF. EXAMINATION, JUNE/JULY - 2014
MICROBIOLOGY
PAPER - FIRST

[Time allotted: Three hours]

Note: Attempt all Questions.

[Max Marks: 40]

Draw suitable diagrams wherever necessary.

- Q. 1.** Multiple choice questions- separate sheet given ($\frac{1}{2} \times 16 = 08$)
- Q. 2.** Give Reasons: (1 x 4 = 04)
- Cell wall deficient bacteria are known as L forms.
 - Widal is agglutination test not precipitation test.
 - Guinea pig serum is used as a source of complement.
 - Paul -Bunnel test is heterophile agglutination test.
- Q. 3.** Fill in the blanks: (1 x 4 = 04)
- Infections transmitted by ingestion are _____ and _____
 - Two attributes of antigenicity are _____ and _____
 - Two examples of agglutination reactions are _____ and _____
 - Peripheral lymphoid organs are _____ and _____
- Q. 4.** Write in brief about: (2 x 4 = 08)
- Enrichment media
 - Eukaryotes and Prokaryotes
 - Mutation
 - Autoclave
- Q. 5. (i)** What is CMI? Which cells are associated with CMI? How is CMI detected? What are the mediators of CMI? (1+1+1+1= 04)
- Q. 5. (ii)** Problem based question: (1 x 4 = 04)
- A young male is suffering from fever, haemoglobinuria and intravascular haemolysis. He was earlier treated with quinine.
- What is the provisional diagnosis?
 - Describe life cycle of the parasite.
 - What all diseases are caused by this parasite?
 - What laboratory tests are performed for diagnosis?
- Q. 6.** Write short notes on: (2 x 4 = 08)
- Complement.
 - Classify cestodes, describe any one.(morphology ,life cycle, diseases caused).
 - Cysticercus cellulose
 - Laboratory diagnosis of malaria

M.B.B.S. SECOND PROF. EXAMINATION, JUNE/JULY - 2014**MICROBIOLOGY****PAPER – FIRST (MCQ)****SET - D****Time allotted for MCQ – 20 minutes****Q. 1. Multiple Choice questions (Encircle the single best response)****(0.5 x 16 = 08)**

1. Loa Loa is also known as :
 - a. Guinea worm
 - b. Eye worm
 - c. Bladder worm
 - d. Whip worm
2. Which of the following vaccine is NOT given at birth:
 - a. Oral polio
 - b. BCG
 - c. Hepatitis B
 - d. DPT
3. Immunity in community is known as:
 - a. Innate immunity
 - b. Passive immunity
 - c. Adaptive immunity
 - d. Herd immunity
4. IgG antibodies have, subclasses:
 - a. Two
 - b. Three
 - c. Four
 - d. Five
5. Complement is a complex of _____ different fractions:
 - a. Five
 - b. Seven
 - c. Nine
 - d. Eleven
6. CD₈ cells are:
 - a. Helper cells
 - b. Suppressor cells
 - c. Thymocytes
 - d. Langerhans cells
7. Definitive host for toxoplasma gondii is:
 - a. Dogs
 - b. Cats
 - c. Human beings
 - d. Snails
8. Serum is best sterilized by:
 - a. Auto clave
 - b. Boiling
 - c. Filtration
 - d. Tyndallization
9. Chylous urine is seen in:
 - a. T. vaginalis
 - b. N. fowleri
 - c. W. bancrofti
 - d. A. duodenale
10. Primary amoebic meningoencephalitis is caused by:
 - a. N. fowleri
 - b. E. coli
 - c. G. lamblia
 - d. I. buetschlii
11. Congenital infections and abortions are caused by:
 - a. T. vaginalis
 - b. C. parvum
 - c. T. gondii
 - d. H. diminuta
12. Who is considered as Father of Microbiology?
 - a. Robert Koch
 - b. Louis Pasteur
 - c. A. V. Leeuwenhoek
 - d. Augustino Bassi
13. The limit of resolution with unaided eye is:
 - a. 200 microns
 - b. 500 microns
 - c. 100 microns
 - d. 200 nm
14. Microaerophilic bacteria are that which grow best in:
 - a. High O₂ tension
 - b. No O₂
 - c. Low O₂ tension
 - d. Needs catalyst
15. Tyndallisation is done at:
 - a. 1000 C for 20 mts for one day
 - b. 1000 C for 30 mts for 03 days
 - c. 1600 C for 60 mts
 - d. 1000 C for 20 mts for 03 days
16. Length of DNA is expressed in:
 - a. Micron
 - b. Base pair
 - c. Millimeter
 - d. Nanometers

Regn. No.....

Paper Code: 227

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2015
MICROBIOLOGY
PAPER – FIRST

[Max Marks: 40]

[Time allotted: Three hours]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given

($\frac{1}{2} \times 16 = 08$)

Q. 2. Give Reasons:

(1 x 4 = 04)

- Spores are heat resistant but vegetative cells are not.
- Complete air discharge is essential in autoclaving.
- Isopropyl alcohol is better than ethyl alcohol for skin disinfection.
- Conjugation between F- and Hfr results in F- only.

Q. 3. Problem based question:

(1 x 4 = 04)

A 25 years young male is suffering from fever, massive splenomegaly, hepatomegaly, lymphadenopathy and anaemia. He is living in an endemic area of blood sucking insects.

- What is the most probable clinical diagnosis?
- Describe the life cycle of the parasite.
- Write differential diagnosis.
- What diagnostic tests will be carried out?

Q. 4. Write in brief:

(2 x 4 = 08)

- Plasmid
- Autoimmunity
- Bacterial cell wall
- Human cycle of *Plasmodium falciparum*

Q. 5. (i) What are general features of Antigen-Antibody reactions? Describe the principle of ELISA test.

(2+2= 04)

(ii) Enumerate the parasites that enter through skin. Describe the life cycle of any one of these by arrow diagram only.

(1+3= 04)

Q. 6. Write short notes on:

(2 x 4 = 08)

- Chemical antiseptics and disinfectants.
- Smallest intestinal nematode.
- Differences between bacterial and eukaryotic genomes.
- IgM antibody.

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2015
MICROBIOLOGY
PAPER - FIRST (MCQ)

SET - C

Time allotted for MCQ - 20 minutes

Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)

(0.5 x 16 = 08)

1. Endotoxin causes shock due to:
 - a. Lipoprotein
 - b. Polysaccharide
 - c. Lipopolysaccharide
 - d. Polyamide
2. Which of these are in cubicle packets of eight:
 - a. Micrococci
 - b. Sarcina
 - c. Aerococcus
 - d. Peptostreptococcus
3. Vaccines are sterilized by:
 - a. Heat inactivation
 - b. Seitz filtration
 - c. Autoclave
 - d. Hot air oven
4. Disposable syringes are best sterilized by:
 - a. Boiling
 - b. Autoclave
 - c. Hot air oven
 - d. Gamma rays
5. Adult *W. bancrofti* in man is found in:
 - a. Blood
 - b. Lymphatics
 - c. Liver
 - d. CSF
6. Which of the following can be used for culture of Leishmania?
 - a. Hela cell culture
 - b. Blood agar
 - c. Chocolate agar
 - d. NNN medium
7. Flask shaped ulcers are seen in intestine due to:
 - a. *Entamoeba histolytica*
 - b. *Giardia lamblia*
 - c. *Trichomonas vaginalis*
 - d. *Leishmania donovani*
8. Sickle shaped gametocytes are seen in infections caused by:
 - a. *P. vivax*
 - b. *P. malariae*
 - c. *P. ovale*
 - d. *P. falciparum*
9. Larva penetrate through skin of man EXCEPT:
 - a. *N. americanus*
 - b. *A. duodenale*
 - c. *D. medinensis*
 - d. *S. stercoralis*
10. The main choice aim of adjuvant is to increase:
 - a. Distribution
 - b. Absorption
 - c. Antigenicity
 - d. Metabolism
11. Rosette formation with sheep RBC indicate functioning of:
 - a. T cells
 - b. B cells
 - c. Monocytes
 - d. Neutrophils
12. T cells are identified by:
 - a. Rosette formation with sheep RBC
 - b. Immunoglobulins on their surface
 - c. EAC rosette with chick erythrocytes
 - d. Have filamentous projections on their surface
13. Opsonisation is by:
 - a. IgA
 - b. IgG
 - c. IgE
 - d. IgM
14. Immediate hypersensitivity reaction example is:
 - a. Tuberculin test
 - b. Lepromin test
 - c. Fairley's test
 - d. Casoni's test
15. Mesophilic bacteria grow best at temperature:
 - a. -20° C to 7° C
 - b. 25° C to 40° C
 - c. 55° C to 80° C
 - d. 10° C to 25° C
16. Which of these is NOT a bacteria?
 - a. Mycoplasma
 - b. Chlamydia
 - c. Prion
 - d. Rickettsia

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2015
MICROBIOLOGY
PAPER – SECOND

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given

(½ x 16 = 08)

Q. 2. Give Reasons:

(1 x 4 = 04)

- a. Multidrug regimen is used for the treatment of tuberculosis.
- b. Immunoprophylaxis for influenza is difficult.
- c. Red bags for waste disposal must not be incinerated.
- d. Lactose fermenting bacteria appear pink in MacConkey agar media.

Q. 3. Problem based question:

(1+1+2 = 04)

A 24 years old patient is admitted to emergency with fever, headache and neck rigidity. CSF examination reveals sugar 10mg/dl, proteins 625 mg/dl and 10,000 cells/cu.mm with predominance of neutrophils (90%).

- a. What is your probable diagnosis?
- b. Enumerate the causative organisms.
- c. List the microbiological investigations you would undertake for this condition.

Q. 4. Write in brief:

(2 x 4 = 08)

- a. A labeled diagram of HIV.
- b. Standard tests for syphilis.
- c. Laboratory diagnosis of diphtheria.
- d. Rhinosporidiosis.

Q. 5. (i) What is the causative agent of cholera? Discuss its pathogenesis.

(04)

(ii) Enumerate the sexually transmitted diseases and how will you diagnose a case of gonorrhea? **(04)**

Q. 6. Write short notes on:

(2 x 4 = 08)

- a. Hepatitis B viral markers
- b. BCG vaccine
- c. Antigenic shift of influenza virus.
- d. Aspergillosis.

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2015
MICROBIOLOGY
PAPER - SECOND (MCQ)

Time allotted for MCQ - 20 minutes

SET - D

Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)

(0.5 x 16 = 08)

1. Trachoma is caused by which serovar of Chlamydia?
 - a. A,B,Ba,C
 - b. D-K
 - c. L1-L3
 - d. All of the above
2. Oxidase positive bacteria is:
 - a. Streptococcus pyogenes
 - b. Staphylococcus aureus
 - c. Pseudomonas aeruginosa
 - d. Pneumococcus
3. Darting motility is seen:
 - a. Proteus
 - b. E.coli
 - c. Vibrio
 - d. Salmonella
4. Q fever is caused by:
 - a. R. prowazekii
 - b. R. quintana
 - c. R. akari
 - d. C. burnetti
5. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Tubular
 - d. None of the above
6. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
7. What is the shape of the rabies virus?
 - a. Spherical
 - b. Polygonal
 - c. Bullet shaped
 - d. Tubular
8. Which of the following bacteria is catalase positive?
 - a. Staphylococcus aureus
 - b. Streptococcus pyogenes
 - c. Enterococcus
 - d. Pneumococcus
9. Epidemic typhus is caused by:
 - a. R. prowazekii
 - b. R. quintana
 - c. R. akari
 - d. C. burnetti
10. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
11. BCG vaccine is a:
 - a. Live attenuated preparation
 - b. Killed preparation
 - c. Toxoid preparation
 - d. Preparation recombinant
12. Satellitism is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
13. Chlamydia causes all of the following EXCEPT:
 - a. Trachoma
 - b. Non-gonococcal urethritis
 - c. Pneumonia
 - d. Parotitis
14. Which of the following bacteria is acid fast?
 - a. E. coli
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Vibrio
15. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
16. The Widal test is a type of:
 - a. Precipitation reaction
 - b. Agglutination reaction
 - c. Complement fixation test
 - d. Immunofluorescence

M.B.B.S. SECOND PROF. EXAMINATION, JUNE - 2015
MICROBIOLOGY
PAPER – FIRST

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given

(½ x 16 = 08)

Q. 2. Give Reasons:

(1 x 4 = 04)

- a. Autoclave lid is not opened unless pressure is reduced to near atmospheric pressure.
- b. Catalase test is usually not done from growth on blood agar plate.
- c. Urine specimen is cultured on CLED medium.
- d. *Ascaris lumbricoides* causes pneumonitis but *Enterobius* does not.

Q. 3. Problem based question:

(1 x 4 = 04)

A patient from eastern UP has come to you with complaints of passing milky white urine.

- a. What is the most likely diagnosis?
- b. Give the biological name of organism.
- c. When will you collect the blood for examination?
- d. Name the vector for this disease.

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. *Cysticercus cellulosae*
- b. Contributions of Louis Pasteur in Microbiology.
- c. Restricted transduction
- d. Steps of complement fixation test

Q. 5. (i) Define sterilization and list various methods of sterilization. Explain the principle and working of autoclave in detail.

(1+1+2 = 04)

(ii) Name the cestodes found in human being. How will you differentiate between *Taenia solium* & *T. saginata*? Describe the life cycle of *Taenia solium*.

(1 2+1 = 04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Depict life cycle of *Ascaris lumbricoides* by arrow diagrams only.
- b. Make labeled diagrams of various stages of *Plasmodium vivax* and *Plasmodium falciparum* seen in peripheral blood smear.
- c. Steps of Ziehl Neelsen staining methods.
- d. Differentiate between primary and secondary immune response.

Regn. No.....

M.B.B.S. SECOND PROF. EXAMINATION, JUNE - 2015
MICROBIOLOGY
PAPER – FIRST (MCQ)

Time allotted for MCQ – 20 minutesSet - A

Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)

1. Dark ground microscopy is useful for detection of:
 - a. Chlamydia
 - b. Fungi
 - c. Spirochaetes
 - d. Viruses
2. Cell wall of Gram negative bacteria:
 - a. Is thick
 - b. Lacks lipids
 - c. Lacks teichoic acid
 - d. Contains mycolic acid
3. Agar in most media is generally used at a concentration of:
 - a. 0.5%
 - b. 2.0%
 - c. 5.0%
 - d. 10.0%
4. L- forms of bacteria are likely to be formed if the antibiotic present in liquid medium is:
 - a. Penicillin
 - b. Erythromycin
 - c. Streptomycin
 - d. Tetracycline
5. MacConkey medium is an example of:
 - a. Transport medium
 - b. Differential medium
 - c. Enriched medium
 - d. Enrichment medium
6. When flagella are distributed all round the bacterial cell, the arrangement is known as?
 - a. Lophotrichous
 - b. Amphitrichous
 - c. Monotrichous
 - d. Peritrichous
7. Heat labile immunoglobulin is:
 - a. IgE
 - b. IgA
 - c. IgG
 - d. IgM
8. Example of complement fixation test is:
 - a. Weil Felix reaction
 - b. Wasserman reaction
 - c. Rose Waller test
 - d. Widal test
9. Graft Vs host reaction is caused by:
 - a. B lymphocyte
 - b. T lymphocyte
 - c. Complement
 - d. Macrophage
10. Anaphylactic reactions are mediated by which class of immunoglobulin?
 - a. IgM
 - b. IgE
 - c. IgA
 - d. gG
11. VDRL test is an example of:
 - a. Agglutination test
 - b. Flocculation test
 - c. Complement fixation test
 - d. None of the above
12. Mature cyst of *E. histolytica* is:
 - a. Uninucleate
 - b. Binucleate
 - c. Quadrinucleate
 - d. Octanucleate
13. Amastigote form of *Leishmania donovani* resides in the:
 - a. Cells of reticuloendothelial system
 - b. Culture media
 - c. Digestive tract insect vector
 - d. All of the above
14. Crescent-shaped or banana-shaped gametocytes are seen in infection with:
 - a. *Plasmodium vivax*
 - b. *Plasmodium falciparum*
 - c. *Plasmodium ovale*
 - d. *Plasmodium malariae*
15. Which is the intermediate host for *taeniasaginata*?
 - a. Man
 - b. Cattle
 - c. Pig
 - d. Sheep
16. Which of the following eggs floats in the saturated salt solution?
 - a. Unfertilized egg of *Ascaris lumbricoides*
 - b. Fertilized egg of *Ascaris lumbricoides*
 - c. Egg of Tape worm
 - d. All of the above

M.B.B.S. SECOND PROF. EXAMINATION, JUNE - 2015
MICROBIOLOGY
PAPER – SECOND

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given

($\frac{1}{2} \times 16 = 08$)

Q. 2. Give Reasons:

(1 x 4 = 04)

- a. ATS is always given after doing sensitivity test.
- b. LSS media is preferred over other media for diphtheria.
- c. Widal test is positive in typhoid fever during second week of illness, not in the first week.
- d. Antigenic drift and shift are seen in influenza virus, not in other viruses.

Q. 3. Problem based question:

(1 x 4 = 04)

A 10 months old child has been brought to you by his parents with 1 day history of fever, vomiting, neck rigidity and convulsions.

- a. What is the most likely diagnosis?
- b. Name two bacteria that commonly cause that condition.
- c. What will be the CSF findings (Microbiological)?
- d. What test will you perform to diagnose the condition within one hour?

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Lesions caused by *Candida albicans*.
- b. Opportunistic infections in AIDS.
- c. Satellitism
- d. Toxins produced by *Staphylococcus aureus*.

Q. 5. (i) Describe the laboratory diagnosis of enteric fever.

(04)

(ii) Describe the various markers seen in a patient of Hepatitis B.

(04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Differentiate between *Streptococcus viridans* and pneumococci. (in tabular form)
- b. Draw a neat labeled diagram of HIV.
- c. Make labeled diagram of *Aspergillus*.
- d. Differentiate between *Mycoplasma* and L-forms of bacteria.

Regn. No.....

M.B.B.S. SECOND PROF. EXAMINATION, JUNE - 2015
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutesSet - B

Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)

(0.5 x 16 = 08)

1. Undulant fever is caused by:
 - a. Bartonella
 - b. Brucella
 - c. Borrelia
 - d. Bordetella
2. Generation time of tubercle bacilli is:
 - a. 15-20 min.
 - b. 15-20 hrs.
 - c. 15-20 days
 - d. None of the above
3. Darting motility is shown by:
 - a. Proteus
 - b. E. coli
 - c. Vibrio
 - d. Listeria
4. Double stranded RNA virus is:
 - a. Influenza virus
 - b. Rabies virus
 - c. Calici virus
 - d. Reo virus
5. Single stranded DNA virus is:
 - a. Herpes simplex virus
 - b. Rabies virus
 - c. Parvo virus
 - d. Papova virus
6. Chemical nature of interferon is:
 - a. Protein
 - b. Lipid
 - c. Polysaccharide
 - d. All of the above
7. Rabies virus is shaped like a:
 - a. Sphere
 - b. Bullet
 - c. Rectangle
 - d. Spiral
8. The culture media used for cultivation of fungus is:
 - a. Tellurite medium
 - b. NNN medium
 - c. Sabouraud's medium
 - d. Chocolate agar medium
9. Candida is the etiological agent in all of the following EXCEPT:
 - a. Endocarditis
 - b. Mycetoma
 - c. Meningitis
 - d. Oral thrush
10. Non cultivable fungus is:
 - a. Rhinosporidium
 - b. Candida
 - c. Sporothrix
 - d. Penicillium
11. Reynolds Braude phenomenon is seen in:
 - a. Alternaria
 - b. Aspergillus
 - c. Oosporium
 - d. Candida albicans
12. Following are acid fast EXCEPT:
 - a. Nocardia
 - b. Bacterial spores
 - c. Mycobacteria
 - d. Mycoplasma
13. Staphylococcus does not cause:
 - a. Abscess
 - b. Bronchopneumonia
 - c. Osteomyelitis
 - d. Scarlet fever
14. Virulence of gonococci is due to:
 - a. Pili
 - b. Cell membrane
 - c. Its intracellular location
 - d. Cytolytic enzyme
15. Pseudomembranous colitis is caused by:
 - a. Pseudomonas
 - b. Clostridium welchii
 - c. Clostridium difficile
 - d. Yersinia enterocolitica
16. Naeglers reaction detects:
 - a. Coagulase
 - b. Hyaluronidase
 - c. Lecithinase
 - d. Neuraminidase

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016**MICROBIOLOGY
PAPER – FIRST (SAQ)****[Time allotted: Three hours]****[Max Marks: 40]**

Note: Attempt all Questions.
Draw suitable diagrams wherever necessary.

- Q. 1.** Multiple choice questions- separate sheet given (½ x 16 = 08)
- Q. 2. Give Reasons:** (1 x 4 = 04)
- A tetanus toxoid injection site is warm and tender for the next few days.
 - The presence of IgM antibodies against *Toxoplasma gondii* in the blood of a newborn baby is suggestive of transplacental infection.
 - Löffler's syndrome may be caused by *Ascaris lumbricoides* and hookworms, but not by *Trichuris trichiura*.
 - Boiling cannot sterilize a surgical instrument.
- Q. 3. Problem based question:** (1+1+1+1= 04)
- A 60-year old gentleman receives a dose of the pneumococcal vaccine containing purified capsular polysaccharides of *Streptococcus pneumoniae*. Three weeks later, his blood is examined and found to have high levels of IgM antibodies but no IgG against pneumococcal polysaccharide.
- Which cells produced the circulating IgM antibodies?
 - Why were no IgG antibodies formed even after three weeks?
 - Shall a booster dose of the same vaccine succeed in inducing IgG formation?
 - Name any vaccine that contains protein / peptide, instead of polysaccharides.
- Q. 4. Write short notes on:** (2 x 4 = 08)
- Type III hypersensitivity
 - Bacterial endospore
 - Entamoeba histolytica*
 - Spaulding's classification of healthcare devices
- Q. 5. (i)** Name the parasitic diseases transmitted by mosquito bite and describe life cycle of any one such parasite. (04)
- (ii)** Enumerate methods of sterilization and describe hot air oven in detail. (04)
- Q. 6. Write in brief:** (2 x 4 = 08)
- Life cycle of *Taenia saginata* (a flow diagram only).
 - Operating cycle of an autoclave (a flow diagram specifying temperature & time only).
 - Laboratory diagnosis of malaria (just mention the specimens to be collected, the tests to be performed on them, and expected results).
 - The difference between Gram-positive and Gram-negative cell walls with a labelled diagram.

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016**MICROBIOLOGY****PAPER – FIRST (MCQ)****Time allotted for MCQ – 20 minutes****Set - B****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**

1. Transfer of naked DNA between bacteria without the mediation of bacteriophages or conjugation pili is called:
 - a. Translation
 - b. Transformation
 - c. Conjugation
 - d. Transduction
2. The antibody isotype found especially at mucosal surfaces is:
 - a. IgG
 - b. IgA
 - c. IgM
 - d. IgE
3. Humoral immunity is critically important for protective immunity against:
 - a. Mycobacterium tuberculosis
 - b. Streptococcus pneumoniae
 - c. Leishmania donovani
 - d. Mycobacterium leprae
4. Which of the following is a common cause of diarrhoea?
 - a. Giardia lamblia
 - b. Trichomonas hominis
 - c. Chilomastix mesnili
 - d. Entamoeba coli
5. Which of the following is known to cause dysentery?
 - a. Enterobius vermicularis
 - b. Strongyloides stercoralis
 - c. Taenia solium
 - d. Ascaris lumbricoides
6. Neurocysticercosis is generally caused by eating:
 - a. Boiled eggs
 - b. Tandoori chicken
 - c. Salad
 - d. Biscuits
7. Microaerophilic bacteria can grow in:
 - a. An atmosphere with 80 % oxygen
 - b. An atmosphere with 21 % oxygen
 - c. An atmosphere with 5 % oxygen
 - d. An atmosphere with no oxygen
8. Bacterial cell wall is made of:
 - a. Phospholipid
 - b. Chitin
 - c. Cellulose
 - d. Peptidoglycan
9. Which of the following is true of the bacterial chromosome?
 - a. It encodes essential "housekeeping" genes
 - b. It may contain either DNA or RNA or both
 - c. It has introns
 - d. It is surrounded by a nuclear membrane
10. Sterilization can be achieved using:
 - a. Ethanol
 - b. Chlorhexidine
 - c. Cetrimide
 - d. Glutaraldehyde
11. Which one can bind to specific antibody, but cannot stimulate antibody production?
 - a. Adjuvant
 - b. Hapten
 - c. Antiserum
 - d. Superantigen
12. Which of the following is found only in bacteria?
 - a. Membrane-bound nucleus
 - b. 80S Ribosome
 - c. 70S Ribosome
 - d. Mitochondria
13. Which stage of malaria parasites is transmitted from mosquitoes to humans?
 - a. Merozoite
 - b. Trophozoite
 - c. Gametocyte
 - d. Sporozoite
14. Which stage of hookworms infects human beings?
 - a. Freshly laid ovum
 - b. Embryonated ovum
 - c. Filariform larva
 - d. Adult worm
15. Which of the following is an efficient antigen-presenting cell?
 - a. Dendritic cell
 - b. T-lymphocyte
 - c. Neutrophil
 - d. Erythrocyte
16. Naïve B-lymphocytes bind to specific antigen with the help of:
 - a. Class I MHC molecules
 - b. Class II MHC molecules
 - c. Circulating antibody
 - d. Membrane-bound antibody

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016**MICROBIOLOGY
PAPER – FIRST (MCQ)****Time allotted for MCQ – 20 minutes****Set - C**

- Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**
1. Humoral immunity is critically important for protective immunity against:
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 - b. Streptococcus pneumoniae
 - c. Leishmania donovani
 - d. Mycobacterium leprae
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 - c. Salad
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 - a. An atmosphere with 80 % oxygen
 - b. An atmosphere with 21 % oxygen
 - c. An atmosphere with 5 % oxygen
 - d. An atmosphere with no oxygen
 6. Bacterial cell wall is made of:
 - a. Phospholipid
 - b. Chitin
 - c. Cellulose
 - d. Peptidoglycan
 7. Which of the following is true of the bacterial chromosome?
 - a. It encodes essential "housekeeping" genes
 - b. It may contain either DNA or RNA or both
 - c. It has introns
 - d. It is surrounded by a nuclear membrane
 8. Sterilization can be achieved using:
 - a. Ethanol
 - b. Chlorhexidine
 - c. Cetrinide
 - d. Glutaraldehyde
 9. Which one can bind to specific antibody, but cannot stimulate antibody production?
 - a. Adjuvant
 - b. Hapten
 - c. Antiserum
 - d. Superantigen
 10. Which of the following is found only in bacteria?
 - a. Membrane-bound nucleus
 - b. 80S Ribosome
 - c. 70S Ribosome
 - d. Mitochondria
 11. Which stage of malaria parasites is transmitted from mosquitoes to humans?
 - a. Merozoite
 - b. Trophozoite
 - c. Gametocyte
 - d. Sporozoite
 12. Which stage of hookworms infects human beings?
 - a. Freshly laid ovum
 - b. Embryonated ovum
 - c. Filariform larva
 - d. Adult worm
 13. Which of the following is an efficient antigen-presenting cell?
 - a. Dendritic cell
 - b. T-lymphocyte
 - c. Neutrophil
 - d. Erythrocyte
 14. Naïve B-lymphocytes bind to specific antigen with the help of:
 - a. Class I MHC molecules
 - b. Class II MHC molecules
 - c. Circulating antibody
 - d. Membrane-bound antibody
 15. Transfer of naked DNA between bacteria without the mediation of bacteriophages or conjugation pili is called:
 - a. Translation
 - b. Transformation
 - c. Conjugation
 - d. Transduction
 16. The antibody isotype found especially at mucosal surfaces is:
 - a. IgG
 - b. IgA
 - c. IgM
 - d. IgE

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016**MICROBIOLOGY
PAPER – FIRST (MCQ)****Time allotted for MCQ – 20 minutes****Set - D****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**

1. Microaerophilic bacteria can grow in:
 - a. An atmosphere with 80 % oxygen
 - b. An atmosphere with 21 % oxygen
 - c. An atmosphere with 5 % oxygen
 - d. An atmosphere with no oxygen
2. Bacterial cell wall is made of:
 - a. Phospholipid
 - b. Chitin
 - c. Cellulose
 - d. Peptidoglycan
3. Which of the following is true of the bacterial chromosome?
 - a. It encodes essential "housekeeping" genes
 - b. It may contain either DNA or RNA or both
 - c. It has introns
 - d. It is surrounded by a nuclear membrane
4. Sterilization can be achieved using:
 - a. Ethanol
 - b. Chlorhexidine
 - c. Cetrinide
 - d. Glutaraldehyde
5. Which one can bind to specific antibody, but cannot stimulate antibody production?
 - a. Adjuvant
 - b. Hapten
 - c. Antiserum
 - d. Superantigen
6. Which of the following is found only in bacteria?
 - a. Membrane-bound nucleus
 - b. 80S Ribosome
 - c. 70S Ribosome
 - d. Mitochondria
7. Which stage of malaria parasites is transmitted from mosquitoes to humans?
 - a. Merozoite
 - b. Trophozoite
 - c. Gametocyte
 - d. Sporozoite
8. Which stage of hookworms infects human beings?
 - a. Freshly laid ovum
 - b. Embryonated ovum
 - c. Filariform larva
 - d. Adult worm
9. Which of the following is an efficient antigen-presenting cell?
 - a. Dendritic cell
 - b. T-lymphocyte
 - c. Neutrophil
 - d. Erythrocyte
10. Naïve B-lymphocytes bind to specific antigen with the help of:
 - a. Class I MHC molecules
 - b. Class II MHC molecules
 - c. Circulating antibody
 - d. Membrane-bound antibody
11. Transfer of naked DNA between bacteria without the mediation of bacteriophages or conjugation pili is called:
 - a. Translation
 - b. Transformation
 - c. Conjugation
 - d. Transduction
12. The antibody isotype found especially at mucosal surfaces is:
 - a. IgG
 - b. IgA
 - c. IgM
 - d. IgE
13. Humoral immunity is critically important for protective immunity against:
 - a. Mycobacterium tuberculosis
 - b. Streptococcus pneumoniae
 - c. Leishmania donovani
 - d. Mycobacterium leprae
14. Which of the following is a common cause of diarrhoea?
 - a. Giardia lamblia
 - b. Trichomonas hominis
 - c. Chilomastix mesnili
 - d. Entamoeba coli
15. Which of the following is known to cause dysentery?
 - a. Enterobius vermicularis
 - b. Strongyloides stercoralis
 - c. Taenia solium
 - d. Ascaris lumbricoides
16. Neurocysticercosis is generally caused by eating:
 - a. Boiled eggs
 - b. Tandoori chicken
 - c. Salad
 - d. Biscuits

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016**MICROBIOLOGY
PAPER – SECOND (SAQ)****[Time allotted: Three hours]****[Max Marks: 40]****Note:** Attempt all Questions.

Draw suitable diagrams wherever necessary.

- Q. 1.** Multiple choice questions- separate sheet given (½ x 16 = 08)
- Q. 2. Give Reasons:** (1 x 4 = 04)
- a. *Proteus* does not swarm on Mac Conkey agar media.
 - b. Biological false positive reactions are common in standard tests for syphilis.
 - c. Oral polio vaccine protects both the vaccinated individual and the community.
 - d. Alkaline peptone water is used as an enrichment media for *Vibrio cholerae*.
- Q. 3. Problem based question:** (1+1+2= 04)
- A 4 year old child is brought to the emergency department with a history of difficulty in swallowing, pain in the throat and high grade fever. On examination, a whitish membrane is observed over the tonsils.
- a. What is the most probable clinical diagnosis?
 - b. Enumerate the causative organisms.
 - c. What investigations will you undertake for diagnosis of this condition?
- Q. 4. Write short notes on:** (2 x 4 = 08)
- a. Laboratory diagnosis of HIV infection.
 - b. Polio vaccine.
 - c. Standard test for syphilis
 - d. Non gonococcal urethritis.
- Q. 5. (i)** Classify herpes viruses. Enumerate the diseases caused by Epstein Barr virus. (2+2= 04)
- (ii)** Classify fungi. Name one capsulated yeast. (3+1= 04)
- Q. 6. Write in Brief:** (2 x 4 = 08)
- a. Differentiate between orthomyxovirus and paramyxovirus.
 - b. Diseases caused by *Candida*
 - c. Dengue
 - d. Culture media for the isolation of *Salmonella*.

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutes**Set - A****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)****(0.5 x 16 = 08)**

1. Which of the following dermatophytes can infect only skin and hair?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
2. Which of the following fungi is not a mold?
 - a. Aspergillus
 - b. Mucor
 - c. Cryptococcus
 - d. Rhizopus
3. What is the shape of the rabies virus?
 - a. Spherical
 - b. Bullet shaped
 - c. Tubular
 - d. Polygonal
4. All of the following hepatitis viruses are RNA viruses EXCEPT:
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis E virus
 - d. Hepatitis C virus
5. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
6. Q fever is caused by:
 - a. R.prowazekii
 - b. R.quintana
 - c. C.burnetti
 - d. R.akari
7. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Icosahedral
 - d. None of the above
8. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
9. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
10. BCG vaccine is a:
 - a. Recombinant preparation
 - b. Toxoid preparation
 - c. Killed preparation
 - d. Live attenuated preparation
11. An example of artificial virus is:
 - a. Rabies virus
 - b. Influenza virus
 - c. Vaccinia virus
 - d. Polio virus
12. Darting motility is seen:
 - a. Proteus
 - b. Vibrio
 - c. E.coli
 - d. Salmonella
13. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
14. Trachoma is caused by which serovar of Chlamydia:
 - a. A, B, Ba, C
 - b. D-K
 - c. L1-L3
 - d. All of the above
15. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
16. Satellitism is a feature of:
 - a. Yersinia
 - b. Hemophilus
 - c. Bordetella
 - d. Brucella

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutes**Set - B****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)****(0.5 x 16 = 08)**

1. Q fever is caused by:
 - a. R.prowazekii
 - b. R.quintana
 - c. C.burnetti
 - d. R.akari
2. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Icosahedral
 - d. None of the above
3. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
4. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
5. BCG vaccine is a:
 - a. Recombinant preparation
 - b. Toxoid preparation
 - c. Killed preparation
 - d. Live attenuated preparation
6. An example of artificial virus is:
 - a. Rabies virus
 - b. Influenza virus
 - c. Vaccinia virus
 - d. Polio virus
7. Darting motility is seen:
 - a. Proteus
 - b. Vibrio
 - c. E.coli
 - d. Salmonella
8. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
9. Trachoma is caused by which serovar of Chlamydia:
 - a. A, B, Ba, C
 - b. D-K
 - c. L1-L3
 - d. All of the above
10. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
11. Satellitism is a feature of:
 - a. Yersinia
 - b. Hemophilus
 - c. Bordetella
 - d. Brucella
12. Which of the following dermatophytes can infect only skin and hair?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
13. Which of the following fungi is not a mold?
 - a. Aspergillus
 - b. Mucor
 - c. Cryptococcus
 - d. Rhizopus
14. What is the shape of the rabies virus?
 - a. Spherical
 - b. Bullet shaped
 - c. Tubular
 - d. Polygonal
15. All of the following hepatitis viruses are RNA viruses EXCEPT:
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis E virus
 - d. Hepatitis C virus
16. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutes**Set - C****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)****(0.5 x 16 = 08)**

1. Darting motility is seen:
 - a. Proteus
 - b. Vibrio
 - c. E.coli
 - d. Salmonella
2. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
3. Trachoma is caused by which serovar of Chlamydia:
 - a. A, B, Ba, C
 - b. D-K
 - c. L1-L3
 - d. All of the above
4. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
5. Satellitism is a feature of:
 - a. Yersinia
 - b. Hemophilus
 - c. Bordetella
 - d. Brucella
6. Which of the following dermatophytes can infect only skin and hair?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
7. Which of the following fungi is not a mold?
 - a. Aspergillus
 - b. Mucor
 - c. Cryptococcus
 - d. Rhizopus
8. What is the shape of the rabies virus?
 - a. Spherical
 - b. Bullet shaped
 - c. Tubular
 - d. Polygonal
9. All of the following hepatitis viruses are RNA viruses EXCEPT:
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis E virus
 - d. Hepatitis C virus
10. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
11. Q fever is caused by:
 - a. R.prowazekii
 - b. R.quintana
 - c. C.burnetti
 - d. R.akari
12. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Icosahedral
 - d. None of the above
13. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
14. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
15. BCG vaccine is a:
 - a. Recombinant preparation
 - b. Toxoid preparation
 - c. Killed preparation
 - d. Live attenuated preparation
16. An example of artificial virus is:
 - a. Rabies virus
 - b. Influenza virus
 - c. Vaccinia virus
 - d. Polio virus

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutesSet - DQ. 1. Multiple Choice questions (Darken the single best response in OMR sheet)(0.5 x 16 = 08)

1. Trachoma is caused by which serovar of Chlamydia:
 - a. A, B, Ba, C
 - b. D-K
 - c. L1-L3
 - d. All of the above
2. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
3. Satellitism is a feature of:
 - a. Yersinia
 - b. Hemophilus
 - c. Bordetella
 - d. Brucella
4. Which of the following dermatophytes can infect only skin and hair?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
5. Which of the following fungi is not a mold?
 - a. Aspergillus
 - b. Mucor
 - c. Cryptococcus
 - d. Rhizopus
6. What is the shape of the rabies virus?
 - a. Spherical
 - b. Bullet shaped
 - c. Tubular
 - d. Polygonal
7. All of the following hepatitis viruses are RNA viruses EXCEPT:
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis E virus
 - d. Hepatitis C virus
8. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
9. Q fever is caused by:
 - a. R.prowazekii
 - b. R.quintana
 - c. C.burnetti
 - d. R.akari
10. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Icosahedral
 - d. None of the above
11. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
12. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
13. BCG vaccine is a:
 - a. Recombinant preparation
 - b. Toxoid preparation
 - c. Killed preparation
 - d. Live attenuated preparation
14. An example of artificial virus is:
 - a. Rabies virus
 - b. Influenza virus
 - c. Vaccinia virus
 - d. Polio virus
15. Darting motility is seen:
 - a. Proteus
 - b. Vibrio
 - c. E.coli
 - d. Salmonella
16. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above

M.B.B.S. SECOND PROF. EXAMINATION, APRIL/ MAY- 2016
MICROBIOLOGY
PAPER – FIRST (SAQ)

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

- Q. 1.** Multiple choice questions- separate sheet given (½ x 16 = 08)
- Q. 2. Give Reasons:** (1 x 4 = 04)
- Ascaris is not expelled out by peristalsis in faeces
 - Autoclave pressure is never released suddenly.
 - Mosquito is unable to transmit malaria infection by biting the person immediately after obtaining blood meal from a case of malaria.
 - A drop of oil is placed on the slide when we examine a smear under 100 x objective.
- Q. 3. Problem based question:** (1 x 4 = 04)
- A 15 year old boy from Bihar has presented with fever, anemia and massive splenomegaly.
- What is the likely diagnosis?
 - What non specific test is done for the disease?
 - In which other condition will you find massive splenomegaly?
 - What is the drug of choice?
- Q. 4. Write short notes on:** (2 x 4 = 08)
- Contribution of Louis Pasteur in Microbiology
 - Casoni's test
 - Principle of Complement Fixation Test
 - Restricted Transduction.
- Q. 5.** (i) Describe structure of an immunoglobulin molecule and enumerate differences in different types of immunoglobulin in tabular form. (04)
- (ii) Describe batch culture and make a labeled diagram of it. (04)
- Q. 6. Write in brief about:** (2 x 4 = 08)
- Life cycle of Hook worm by arrow diagram only.
 - Represent prozone and postzone phenomenon with diagram.
 - Various stages of Plasmodium falciparum found in peripheral blood with labelled diagram.
 - Differences between Taenia solium and Taenia saginata in tabular form.

M.B.B.S. SECOND PROF. EXAMINATION, APRIL/ MAY- 2016
MICROBIOLOGY
PAPER – FIRST (MCQ)

Time allotted for MCQ – 20 minutes**Set - A****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**

1. Sterols are present in the cytoplasmic membrane of:
 - a. Mycoplasma
 - b. Bacillus
 - c. Clostridium
 - d. Proteus
2. Mesosomes of bacteria are analogous to:
 - a. Mitochondria of eukaryotes
 - b. Lysosomes of eukaryotes
 - c. Golgi apparatus of eukaryotes
 - d. None of the above
3. Bacterial genus/genera of medical importance which produce endospores is/are:
 - a. Bacillus
 - b. Clostridium
 - c. Both of the above
 - d. None of the above
4. Exponential phase of growth curve of bacteria is of limited duration because of:
 - a. Exhaustion of nutrients
 - b. Accumulation of toxic metabolites
 - c. Rise in cell density
 - d. All of the above
5. Destruction or inhibition of microorganisms in living tissues is known as:
 - a. Sterilization
 - b. Disinfection
 - c. Antisepsis
 - d. None of the above
6. All the eggs are bile stained except:
 - a. Trichuris
 - b. Taenia
 - c. Ascaris
 - d. Hook worm
7. Biological controls used in an autoclave is the spores of:
 - a. Bacillus stearothermophilus
 - b. Clostridium welchii
 - c. Bacillus cereus
 - d. Clostridium histolyticum
8. The immunoglobulin which does not cross placenta is:
 - a. IgG 1
 - b. IgG 2
 - c. IgG 3
 - d. IgG 4
9. Resistance to penicillin may be due to:
 - a. Production of β -lactamases by bacteria
 - b. Impermeability of cell envelope
 - c. Alteration or lack of penicillin-binding proteins
 - d. All of the above
10. Which of the following agents is a third generation cephalosporin?
 - a. Cephalexin
 - b. Cephalothin
 - c. Cefotaxime
 - d. Cefoxitin
11. The parasite which does not have a cystic stage is:
 - a. Entamoeba
 - b. Giardia
 - c. Trichomonas
 - d. Balantidium
12. Clinical infection leads to:
 - a. Active natural immunity
 - b. Active artificial immunity
 - c. Passive natural immunity
 - d. Passive artificial immunity
13. The function/s of Fc fragment of IgG is/are:
 - a. it binds to complement
 - b. it is related to passage of IgG across the placental barrier
 - c. it determines catabolic rate
 - d. All of the above
14. Phylogenetically, the oldest immunoglobulin class is:
 - a. IgA
 - b. IgM
 - c. IgG
 - d. IgE
15. Which class of immunoglobulin can bind to mast cells and basophils?
 - a. IgA
 - b. IgM
 - c. IgD
 - d. IgE
16. J chain is present in:
 - a. IgA
 - b. IgM
 - c. Both of the above
 - d. None of the above

M.B.B.S. SECOND PROF. EXAMINATION, APRIL/ MAY- 2016
MICROBIOLOGY
PAPER – FIRST (MCQ)

Time allotted for MCQ – 20 minutes**Set - B**

- Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**
1. Clinical infection leads to:
 - a. Active natural immunity
 - b. Active artificial immunity
 - c. Passive natural immunity
 - d. Passive artificial immunity
 2. The function/s of Fc fragment of IgG is/are:
 - a. it binds to complement
 - b. it is related to passage of IgG across the placental barrier
 - c. it determines catabolic rate
 - d. All of the above
 3. Phylogenetically, the oldest immunoglobulin class is:
 - a. IgA
 - b. IgM
 - c. IgG
 - d. IgE
 4. Which class of immunoglobulin can bind to mast cells and basophils?
 - a. IgA
 - b. IgM
 - c. IgD
 - d. IgE
 5. J chain is present in:
 - a. IgA
 - b. IgM
 - c. Both of the above
 - d. None of the above
 6. Sterols are present in the cytoplasmic membrane of:
 - a. Mycoplasma
 - b. Bacillus
 - c. Clostridium
 - d. Proteus
 7. Mesosomes of bacteria are analogous to:
 - a. Mitochondria of eukaryotes
 - b. Lysosomes of eukaryotes
 - c. Golgi apparatus of eukaryotes
 - d. None of the above
 8. Bacterial genus/genera of medical importance which produce endospores is/are:
 - a. Bacillus
 - b. Clostridium
 - c. Both of the above
 - d. None of the above
 9. Exponential phase of growth curve of bacteria is of limited duration because of:
 - a. Exhaustion of nutrients
 - b. Accumulation of toxic metabolites
 - c. Rise in cell density
 - d. All of the above
 10. Destruction or inhibition of microorganisms in living tissues is known as:
 - a. Sterilization
 - b. Disinfection
 - c. Antisepsis
 - d. None of the above
 11. All the eggs are bile stained except:
 - a. Trichuris
 - b. Taenia
 - c. Ascaris
 - d. Hook worm
 12. Biological controls used in an autoclave is the spores of:
 - a. Bacillus stearothermophilus
 - b. Clostridium welchii
 - c. Bacillus cereus
 - d. Clostridium histolyticum
 13. The immunoglobulin which does not cross placenta is:
 - a. IgG 1
 - b. IgG 2
 - c. IgG 3
 - d. IgG 4
 14. Resistance to penicillin may be due to:
 - a. Production of β -lactamases by bacteria
 - b. Impermeability of cell envelope
 - c. Alteration or lack of penicillin-binding proteins
 - d. All of the above
 15. Which of the following agents is a third generation cephalosporin?
 - a. Cephalixin
 - b. Cephalothin
 - c. Cefotaxime
 - d. Cefoxitin
 16. The parasite which does not have a cystic stage is:
 - a. Entamoeba
 - b. Giardia
 - c. Trichomonas
 - d. Balantidium

M.B.B.S. SECOND PROF. EXAMINATION, APRIL/ MAY- 2016

MICROBIOLOGY
PAPER – SECOND (SAQ)

[Time allotted: Three hours]

[Max Marks: 40]

Note: Attempt all Questions.

Draw suitable diagrams wherever necessary.

Q. 1. Multiple choice questions- separate sheet given

(½ x 16 = 08)

Q. 2. Give Reasons:

(1 x 4 = 04)

- Streptococcus pyogenes* infection leads to rheumatic fever. However, *S. pyogenes* cannot be isolated from the heart and affected joints, even in the acute stage.
- CSF was collected from girl with acute pyogenic meningitis and kept in the refrigerator because the microbiology laboratory was closed for the night. The next day, the Gram-stained smear showed numerous polymorphonuclear cells and Gram-negative cocci in pairs, but cultures were negative.
- An elderly gentleman from Dehradun received the influenza vaccine for the 2014-2015 winter season in the northern hemisphere, but developed laboratory-confirmed influenza in December 2015.
- A temperature of 121°C is enough to kill all microbes in an autoclave, but in a hot air oven, the temperature needs to be raised to at least 160°C.

Q. 3. Problem based question:

(1+1+1+1= 04)

There is an outbreak of fever, retro-orbital headache, with severe pain in the muscles and joints in our campus over the past two weeks. Some of the victims have also had purpuric lesions in the lower extremities.

- What is the most likely cause of the illness?
- How is it spread among humans?
- What specimen will you collect for specific laboratory diagnosis?
- Name one antigen of the virus that is found in peripheral blood during acute illness.

Q. 4. Write short notes on:

(2 x 4 = 08)

- Clinical manifestations of *Staphylococcus aureus* infection
- Laboratory diagnosis of gonorrhoea (specimens, tests, and expected findings. Mention names of specific culture media)
- Two bacterial structures that are targets of antibiotic action
- Laboratory diagnosis of dermatophyte (specimens, tests, and expected findings. Mention names of specific culture media)

Q. 5. (i) Describe the serological tests for syphilis. What are the advantages of VDRL test over TPI?

(2+2= 04)

(ii) Describe the different vaccines available against influenzae.

(04)

Q. 6. Write in Brief:

(2 x 4 = 08)

- Polio vaccines (Just the name, formulation, route of administration, and relative advantages and disadvantages in a table with 2 columns and 5-7 rows)
- The three epidemiological patterns of dermatophyte infections.
- Steps in the development of primary pulmonary tuberculosis (Just the steps; start from the inhalation of infected droplet nuclei)
- Laboratory diagnosis of HIV infection (Specimens, tests)

M.B.B.S. SECOND PROF. EXAMINATION, JANUARY - 2016
MICROBIOLOGY
PAPER – SECOND (MCQ)

Time allotted for MCQ – 20 minutesSet - A**Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet)****(0.5 x 16 = 08)**

1. Which of the following dermatophytes can infect only skin and hair?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
2. Which of the following fungi is not a mold?
 - a. Aspergillus
 - b. Mucor
 - c. Cryptococcus
 - d. Rhizopus
3. What is the shape of the rabies virus?
 - a. Spherical
 - b. Bullet shaped
 - c. Tubular
 - d. Polygonal
4. All of the following hepatitis viruses are RNA viruses EXCEPT:
 - a. Hepatitis A virus
 - b. Hepatitis B virus
 - c. Hepatitis E virus
 - d. Hepatitis C virus
5. Segmented RNA is seen in:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
6. Q fever is caused by:
 - a. R.prowazekii
 - b. R.quintana
 - c. C.burnetti
 - d. R.akari
7. The symmetry of pox virus is:
 - a. Helical
 - b. Complex
 - c. Icosahedral
 - d. None of the above
8. Stalactite growth is a feature of:
 - a. Hemophilus
 - b. Yersinia
 - c. Bordetella
 - d. Brucella
9. Negri bodies are seen in the following viral infection:
 - a. Rabies virus
 - b. Polio virus
 - c. Influenza virus
 - d. Herpes virus
10. BCG vaccine is a:
 - a. Recombinant preparation
 - b. Toxoid preparation
 - c. Killed preparation
 - d. Live attenuated preparation
11. An example of artificial virus is:
 - a. Rabies virus
 - b. Influenza virus
 - c. Vaccinia virus
 - d. Polio virus
12. Darting motility is seen:
 - a. Proteus
 - b. Vibrio
 - c. E.coli
 - d. Salmonella
13. Which of the following dermatophytes can infect hair, skin and nail?
 - a. Trichophyton
 - b. Microsporum
 - c. Epidermophyton
 - d. None of the above
14. Trachoma is caused by which serovar of Chlamydia:
 - a. A, B, Ba, C
 - b. D-K
 - c. L1-L3
 - d. All of the above
15. Causative organism of syphilis is:
 - a. Mycoplasma
 - b. Salmonella
 - c. Mycobacterium tuberculosis
 - d. Treponema pallidum
16. Satellitism is a feature of:
 - a. Yersinia
 - b. Hemophilus
 - c. Bordetella
 - d. Brucella

M.B.B.S. SECOND PROF. EXAMINATION, APRIL/ MAY- 2016**MICROBIOLOGY****PAPER – SECOND (MCQ)****Time allotted for MCQ – 20 minutes****Set - B****Q. 1. Multiple Choice questions (Darken the single best response in OMR sheet) (0.5 x 16 = 08)**

1. Which of the following is a purely opportunistic pathogen?
 - a. Histoplasma capsulatum
 - b. Cryptococcus neoformans
 - c. Pneumocystis jiroveci
 - d. Epidermophyton floccosum
2. Which of the following is true about Clostridium tetani?
 - a. It grows in a candle jar after the candle is extinguished
 - b. It grows on nutrient agar
 - c. It produces an exotoxin
 - d. An oral vaccine provides immunity against tetanus
3. Which of the following invades the colonic epithelium?
 - a. Vibrio cholerae
 - b. Shigella dysenteriae
 - c. Enterotoxigenic E. coli (ETEC)
 - d. Enteropathogenic E. coli (EPEC)
4. Which of the following produces a toxin that directly damages muscle?
 - a. Clostridium tetani
 - b. Clostridium botulinum
 - c. Clostridium perfringens
 - d. Clostridium difficile
5. Anaerobic bacteria are commensal flora in the:
 - a. Gastrointestinal system
 - b. Central nervous system
 - c. Cardiovascular system
 - d. Musculo-skeletal system
6. Which of the following is transmitted by mosquitoes?
 - a. Cytomegalovirus
 - b. Poliovirus
 - c. Rabies virus
 - d. Japanese encephalitis virus
7. After a bite on the face by a rabid dog, rabies has to be prevented by:
 - a. Only active immunisation
 - b. Only passive immunisation
 - c. Both active and passive immunisation
 - d. Neither active nor passive immunisation
8. Staphylococcus epidermidis is a very important pathogen after:
 - a. Total hip replacement
 - b. Laparoscopic cholecystectomy
 - c. Appendectomy
 - d. Release of post-burn contractures
9. Which of the following is a good selective medium for Salmonella typhi?
 - a. Blood Agar
 - b. Cystine Lactose Electrolyte Deficient Agar
 - c. Thiosulphate Citrate Bile-salt Sucrose Agar
 - d. Xylose Lysine Deoxycholate Agar
10. Which of the following is a very important cause of urethritis and cervicitis?
 - a. Chlamydia psittaci
 - b. Chlamydia trachomatis
 - c. Campylobacter jejuni
 - d. Staphylococcus aureus
11. Which of these may produce budding yeast cells, pseudohyphae and hyphae?
 - a. Trichophyton rubrum
 - b. Cryptococcus neoformans
 - c. Candida albicans
 - d. Pityrosporum ovale
12. A 32-year old woman came to the obstetrics clinic in the second trimester for antenatal care. She was treated for syphilis seven years ago. The results of serologic tests for syphilis are as follows:
Non treponemal test (VDRL): Non-reactive
Treponemal test (TPHA): Reactive
Which of the following statements is correct?
 - a. The baby has a high risk of developing congenital syphilis
 - b. The woman should never become pregnant again
 - c. The woman must be treated again for syphilis
 - d. The woman need not be treated again for syphilis, and the baby has no risk of developing congenital syphilis
13. Vibrio cholerae shows which of the following characteristics?
 - a. It can survive in gastric acid for up to one month
 - b. It can survive at 100°C for five minutes
 - c. It can grow at a pH of 9.2
 - d. It is a gram-positive bacillus
14. Which of the following fungi infects the skin, but not deeper structures?
 - a. Aspergillus fumigatus
 - b. Trichophyton rubrum
 - c. Histoplasma capsulatum
 - d. Candida albicans
15. Which one has a lipid envelope, and is inactivated by 70% ethanol?
 - a. Influenza virus
 - b. Parvovirus
 - c. Human papillomavirus
 - d. Poliovirus
16. Which of the following is oncogenic in human beings?
 - a. Parvovirus
 - b. Epstein-Barr virus
 - c. Rhinovirus
 - d. Hepatitis A virus

**MICROBIOLOGY
PAPER- FIRST**

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

Q. 2. Give Reasons:**(1 x 4 = 04)**

- a. IgM molecule is called as 'millionaire molecule'.
- b. Type IV hypersensitivity is classified as delayed hypersensitivity.
- c. Non lactose fermenting bacteria appears pale color in Mac Conkey agar media.
- d. NIH swab is the best specimen for laboratory diagnosis of threadworm infection.

Q. 3. Problem based question:**(1 x 4 = 04)**

A 16 year old boy was brought to medicine OPD with fever associated with chills, rigor and profuse sweating. Peripheral blood smear shows multiple ring forms and crescent shaped gametocyte.

- a. What is the most probable clinical diagnosis?
- b. Describe the life cycle of the parasite.
- c. Write differential diagnosis.
- d. What diagnostic tests will be carried out?

Q. 4. Write short notes on:**(2 x 4 = 08)**

- a. Bacterial flagella
- b. Toxoplasma gondii
- c. Draw and label a microfilaria
- d. IgG

Q. 5. (i) What are the mechanisms of transfer of genetic material in bacteria? Write a note on conjugation.**(2+2= 04)**

(ii) Enumerate the parasites requiring two intermediate hosts during their life cycle. Describe the life cycle of any one of these by arrow diagram only.

(2+2= 04)**Q. 6. Write in brief about:****(2 x 4 = 08)**

- a. Universal precautions
- b. Type I hypersensitivity
- c. B cell
- d. Giardia lamblia

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, FEBRUARY - 2017
MICROBIOLOGY
PAPER - FIRST

[Max Marks: 40]

[Time allotted: Three hours]

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

SET - C

1. Hereditary angioneurotic edema is due to genetic deficiency of:
 - a. C3
 - b. C6
 - c. C1 inhibitor
 - d. C7
2. Ataxia telangiectasia syndrome is due to:
 - a. B cell defect
 - b. T cell defect
 - c. Combined immunodeficiency
 - d. Disorder of complement
3. Di George's syndrome is due to:
 - a. B cell defect
 - b. T cell defect
 - c. Defect in complement pathway
 - d. Defect in phagocytosis
4. Blood soiled cotton swab is discarded in:
 - a. Yellow bin
 - b. Blue bin
 - c. Black bin
 - d. Green bin
5. Heaviest class of antibody is
 - a. IgG
 - b. IgM
 - c. IgA
 - d. IgE
6. Mature cyst of *E. histolytica* is:
 - a. Uninucleate
 - b. Binucleate
 - c. Quadrinucleate
 - d. Octanucleate
7. Crescent-shaped or banana-shaped gametocytes are seen in infection with:
 - a. *Plasmodium vivax*
 - b. *Plasmodium falciparum*
 - c. *Plasmodium ovale*
 - d. *Plasmodium malariae*
8. Gloves are discarded in:
 - a. Black bin
 - b. Blue bin
 - c. Metal bin
 - d. Green bin
9. Which class of antibody / immunoglobulins can cross placenta?
 - a. IgG
 - b. IgM
 - c. IgE
 - d. IgA
10. Anaphylactic reaction is mediated by which class of immunoglobulin:
 - a. IgG
 - b. IgM
 - c. IgE
 - d. IgA
11. Which of the following nematodes lay unsegmented eggs?
 - a. *Necator americanus*
 - b. *Trichuris trichura*
 - c. *Strongyloides stercoralis*
 - d. *Trichinella spiralis*
12. Which is the definitive host of *Echinococcus granulosus*?
 - a. Dog
 - b. Sheep
 - c. Cattle
 - d. Man
13. Largest trematode is:
 - a. *Fasciola hepatica*
 - b. *Fasciolopsis buski*
 - c. *Clonorchis sinensis*
 - d. *Schistosoma hematobium*
14. Promastigote form of *Leishmania donovani* is seen in:
 - a. red blood cells
 - b. culture media
 - c. hepatocytes
 - d. cells of reticulo endothelial system
15. The Widal test is a type of:
 - a. Precipitation reaction
 - b. Agglutination reaction
 - c. Complement fixation test
 - d. Immunofluorescence
16. The organ of locomotion of bacteria is:
 - a. Capsule
 - b. Flagella
 - c. Fimbriae
 - d. Spore

MICROBIOLOGY PAPER- SECOND

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

Q. 2. Give Reasons:

(1 x 4 = 04)

- a. Diagnosis of HIV cannot be made in the window period.
- b. Dermatophytes cause infection of skin, hair and nails only.
- c. Widal test is positive in second week of typhoid fever not in the first.
- d. Granules in *C. diphtheriae* are called metachromatic.

Q. 3. Problem based question:

(1 x 4 = 04)

A 40 years old truck driver has come with complaints of fever, weight loss and chronic cough for the last 6 weeks.

- a. What is your clinical diagnosis?
- b. Name two common routes of transmission of the above condition.
- c. Name one test which is usually done for the diagnosis.
- d. Name any two drugs to treat the above condition.

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Satellitism
- b. Naeglers Reaction
- c. Mycetoma
- d. Dimorphic fungi

Q. 5. (i) Make a labeled diagram of structure of Hepatitis B virus & describe its laboratory diagnosis.

(2+2 = 04)

(ii) Describe the pathogenesis & laboratory diagnosis of typhoid fever.

(2+2 = 04)

Q. 6. Differentiate between:

(2 x 4 = 08)

- a. Antigenic drift and antigenic shift
- b. Classical and Eltor vibrios
- c. *Streptococcus viridians* & *Streptococcus pneumoniae*
- d. Salk & Sabin's vaccines

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, FEBRUARY - 2017
MICROBIOLOGY
PAPER - SECOND

[Time allotted: Three hours]

[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)

SET - D

1. Which test is used for the diagnosis of congenital syphilis?
 - a. FTA-ABS
 - b. TPI
 - c. FTA-IgM
 - d. TPHA
2. Cholera toxin immunologically resembles:
 - a. E. coli LT
 - b. Diphtheria toxin
 - c. E. coli ST
 - d. Tetanus toxin
3. Koplik spots are characteristic of infection with:
 - a. Measles
 - b. Rubella
 - c. Mumps
 - d. None of the above
4. Diagnosis of enteric fever during first week can be made by:
 - a. Blood culture
 - b. Stool culture
 - c. Urine culture
 - d. Widal test
5. Which of the following infects skin, hair and nails?
 - a. Epidermophyton
 - b. Microsporum
 - c. Trichophyton
 - d. None of the above
6. Which of the following fungi is not a mold?
 - a. Cryptococcus
 - b. Mucor
 - c. Aspergillus
 - d. Penicillium
7. Hepatitis D requires the help of:
 - a. Hepatitis C virus
 - b. Hepatitis B virus
 - c. Hepatitis A virus
 - d. Cytomegalo virus
8. Naeglers reaction is useful in identification of:
 - a. Clostridium tetani
 - b. C. botulinum
 - c. C. welchii
 - d. C. difficile
9. Which virus is large enough to be seen under light microscope?
 - a. Adeno
 - b. Picorna
 - c. Small pox
 - d. HIV
10. Swarming is shown by:
 - a. Proteus mirabilis
 - b. P. myxofaciens
 - c. P. penneri
 - d. All of the above
11. Soft chancre is caused by:
 - a. Neisseria gonorrhoeae
 - b. Hemophilus ducreyi
 - c. Treponema pallidum
 - d. None of the above
12. Scrub typhus is caused by:
 - a. Coxiella burnetii
 - b. Orientia tsutsugamushi
 - c. Rickettsia typhi
 - d. Salmonella typhi
13. Which of the following virus is susceptible to chloroform?
 - a. Influenza
 - b. Polio
 - c. Adeno
 - d. All of the above
14. Fried egg appearance of colonies is seen in:
 - a. Bordetella pertussis
 - b. Mycoplasma pneumoniae
 - c. Chlamydia
 - d. Haemophilus
15. Which of the following bacterium is non-invasive?
 - a. Salmonella typhi
 - b. Streptococcus pyogenes
 - c. Vibrio cholerae
 - d. S. pneumonia
16. Which organism survives Pasteurization?
 - a. Mycobacteria
 - b. Brucella
 - c. Coxiella burnetii
 - d. T. pallidum

MICROBIOLOGY PAPER- FIRST

Note: Attempt all questions.

Draw suitable diagrams (wherever necessary)

Q. 2. Give reasons why:

(1 x 4 = 04)

- a. IgG is the only protective antibody *in utero*
- b. Type I hypersensitivity is termed as immediate hypersensitivity
- c. Relapses do not occur in *Plasmodium falciparum* infections
- d. Needles are discarded in metal container

Q. 3. Problem based question:

(1+2+1= 04)

A farmer having a habit of working barefoot is brought to the outpatient department with complaints of easy fatigability and breathlessness. On examination of tongue, conjunctiva and skin, marked pallor is seen. Peripheral blood smear reveals marked microscopic hypochromic anemia. Stool for occult blood is positive.

- a. What is your probable diagnosis?
- b. Describe the life cycle of the parasite.
- c. Write the differential diagnosis.

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Bacterial growth curve
- b. Determinants of antigenicity
- c. Life cycle of *Ascaris lumbricoides*
- d. Opportunistic amoebae

Q. 5. (i) What are the biological effects of complement? Enumerate the deficiencies of complement system.

(2+2 = 04)

(ii) Enumerate the parasites causing opportunistic infections in AIDS. Describe the life cycle of any one of these.

(2+2 = 04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Biomedical waste management
- b. IgM antibody
- c. T cell
- d. *Loa loa*

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JUNE - 2017
MICROBIOLOGY
PAPER - FIRST

[Time allotted: Three hours]

[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)

SET - B

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Penicillin acts on: <ol style="list-style-type: none"> a. Cell wall b. Ribosome c. Nucleus d. Cell membrane 2. Largest trematode is: <ol style="list-style-type: none"> a. <i>Fasciolopsis buski</i> b. <i>Fasciolopsis hepatica</i> c. <i>Clonorchis sinensis</i> d. <i>Schistosoma hematobium</i> 3. Steam sterilisation at 100°C for 20 minutes on three successive days is known as: <ol style="list-style-type: none"> a. Inspissation b. Tyndallisation c. Pasteurisation d. Vaccine bath 4. Di George syndrome is due to: <ol style="list-style-type: none"> a. T cell defect b. B cell defect c. Defect in complement system d. Defect in phagocytosis 5. Ideal temperature for bacterial culture in an incubator is: <ol style="list-style-type: none"> a. 37°C b. 25°C c. 45°C d. 50°C 6. The organ of adhesion of bacteria is <ol style="list-style-type: none"> a. Slime b. Capsule c. Flagella d. Fimbriae 7. Delayed hypersensitivity is mediated by: <ol style="list-style-type: none"> a. B lymphocytes b. T lymphocytes c. NK cells d. Macrophages 8. In ELISA reader we look for: <ol style="list-style-type: none"> a. Agglutination b. Optical density c. Flocculation d. Precipitation | <ol style="list-style-type: none"> 9. Which of the following media is sterilized by inspissation? <ol style="list-style-type: none"> a. Loeffler's serum slope b. Blood agar c. Peptone water d. MacConkey's agar 10. A good antigen is: <ol style="list-style-type: none"> a. Polysaccharide b. Protein c. Lipid d. Lipoprotein 11. Bacterial loop is sterilized by: <ol style="list-style-type: none"> a. Inspissation b. Hot air oven c. Flaming d. Autoclave 12. Gloves are discarded in: <ol style="list-style-type: none"> a. Blue bin b. Yellow bin c. Green bin d. Metal container 13. The class of immunoglobulins which can cross the placenta are: <ol style="list-style-type: none"> a. IgM b. IgG c. IgE d. IgA 14. Tail tip contains two nuclei in case of microfilaria of: <ol style="list-style-type: none"> a. <i>Loa loa</i> b. <i>Wuchereria bancrofti</i> c. <i>Brugia malayi</i> d. <i>Oncocerca volvulus</i> 15. Definitive host of <i>Echinococcus granulosus</i> is: <ol style="list-style-type: none"> a. Sheep b. Dog c. Cattle d. Man 16. Disposable syringes are sterilized by: <ol style="list-style-type: none"> a. Gamma rays b. Autoclave c. Hot air oven d. Glutaraldehyde |
|---|---|

MICROBIOLOGY PAPER - SECOND

Note: Attempt all questions.

Draw suitable diagrams (wherever necessary)

Q. 2. Give reasons why:

(1 x 4 = 04)

- a. Staphylococcal skin infections are usually localized
- b. Vaccine development for influenza is difficult
- c. VDRL is positive in conditions other than syphilis but TPI is not
- d. Antibody detection for diagnosis of *Mycobacterium tuberculosis* infection is not recommended

Q. 3. Problem based question:

(1+1.5+1.5 = 04)

A 3 year old boy develops sore throat and difficulty in swallowing. On examination the pharyngeal mucosa was inflamed. A culture of throat swab revealed beta hemolytic pin point colonies.

- a. What is the most likely etiological agent responsible for the above condition?
- b. What are clinical manifestations caused by this agent?
- c. Discuss the lab diagnosis of the above mentioned condition.

Q. 4. Write short notes on:

(2 x 4 = 08)

- a. Non-gonococcal urethritis
- b. Markers of hepatitis B infection
- c. Actinomycetoma
- d. Rat bite fever

Q. 5. (i) What are the modes of transmission of HCV infection? Add a note on laboratory diagnosis of HCV infection.

(2+2 = 04)

(ii) Classify fungal diseases. Add a note on dimorphic fungi.

(2+2 = 04)

Q. 6. Write in brief about:

(2 x 4 = 08)

- a. Laboratory diagnosis of HIV infection
- b. Rabies vaccines
- c. Standard tests for syphilis
- d. Non-sporing anaerobes

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JUNE - 2017
MICROBIOLOGY
PAPER - SECOND

[Time allotted: Three hours]

[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)

SET - A

1. All of the following can infect nails **except**:
 - a. *Trichophyton*
 - b. *Microsporum*
 - c. *Epidermophyton*
 - d. *Candida*
2. Epidemic typhus is caused by:
 - a. *Rickettsia burnetti*
 - b. *Rickettsia prowazekii*
 - c. *Rickettsia quintana*
 - d. *Rickettsia akari*
3. Stalactite growth is a feature of:
 - a. *Hemophilus influenzae*
 - b. *Yersinia pestis*
 - c. *Bordetella pertusis*
 - d. *Brucella abortus*
4. Which of the following is a purely opportunistic pathogen?
 - a. *Histoplasma capsulatum*
 - b. *Cryptococcus neoformans*
 - c. *Pneumocystis jirovecii*
 - d. *Epidermophyton floccosum*
5. Which of these may produce budding yeast cells with pseudohyphae?
 - a. *Trichophyton rubrum*
 - b. *Cryptococcus neoformans*
 - c. *Candida albicans*
 - d. *Epidermophyton floccosum*
6. Satellitism is a feature of:
 - a. *Brucella abortus*
 - b. *Hemophilus influenza*
 - c. *Yersinia pestis*
 - d. *Bordetella pertusis*
7. Identify the oncogenic virus:
 - a. Parvovirus
 - b. Epstein-Barr virus
 - c. Rhinovirus
 - d. Hepatitis A virus
8. All of the following infections are transmitted by mosquitoes **except**:
 - a. Malaria
 - b. Poliovirus
 - c. Dengue
 - d. Japanese encephalitis virus
9. Wheal and flare is a type of:
 - a. Type I Hypersensitivity reaction
 - b. Type II Hypersensitivity reaction
 - c. Type III Hypersensitivity reaction
 - d. Type IV Hypersensitivity reaction
10. Fried egg colonies are produced by:
 - a. *Bacillus cereus*
 - b. *Haemophilus influenza*
 - c. *Neisseria subflava*
 - d. *Mycoplasma pneumoniae*
11. Which of the following vaccine is a killed vaccine?
 - a. Mumps vaccine
 - b. Measles vaccine
 - c. Rubella vaccine
 - d. Smallpox vaccine
12. Branching, aseptate hyphae are seen in:
 - a. Mucor
 - b. Aspergillus
 - c. Candida
 - d. Cryptococcus
13. All are true about *Coxiella burnetii* **except**:
 - a. It is obligate intracellular
 - b. Causes 'Q' fever
 - c. Is extremely fastidious
 - d. Is killed by pasteurization.
14. All of the following *Vibrio* species are halophilic **except**:
 - a. *V. cholerae*
 - b. *V. parahaemolyticus*
 - c. *V. alginolyticus*
 - d. *V. vulnificus*
15. All of the following salmonellae are motile **except**:
 - a. *S. typhi*
 - b. *S. enteritidis*
 - c. *S. gallinarum*
 - d. *S. paratyphi*
16. Which of the following statements about congenital rubella syndrome are correct?
 - a. Only rare strains of rubella are teratogenic
 - b. Deafness is a common defect associated with congenital rubella syndrome
 - c. Following vaccination, sero-conversion occurs in 40% of recipients
 - d. Congenital abnormalities occur when a non-immune pregnant woman is infected any time during pregnancy

**MICROBIOLOGY
PAPER- FIRST**

Note: Attempt all questions.

Draw suitable diagrams (wherever necessary)

Q. 2. Give reasons why:

(1 x 4 = 04)

- Needles are discarded in metal container.
- Relapses do not occur in *Plasmodium falciparum* infections.
- IgM is known as millionaire's molecule.
- Gram negative bacteria do not retain the primary stain.

Q. 3. Problem based question:

(1+1.5+1.5 = 04)

A poor farmer is brought to the outpatient department with complains of easy fatigability and breathlessness. On examination of tongue, conjunctiva and skin, marked pallor is seen. Peripheral blood smear reveals marked microscopic hypochromic anemia. Stool for occult blood is positive.

- What is your probable diagnosis?
- Describe the life cycle of the parasite.
- Write the microbiological work up for the condition.

Q. 4. Write short notes on:

(2 x 4 = 08)

- Biomedical waste management
- Opportunistic parasitic infections in AIDS
- T cell
- Bacterial growth curve

Q. 5. (i) Explain with a neat labeled diagram the classical pathway of complement. What are the biological effects of complement?

(04)

(ii) Explain with a neat labeled arrow diagram the life cycle of *Toxoplasma gondii*. Add a note on lab diagnosis of Toxoplasmosis.

(04)

Q. 6. Write in brief about :

(2 x 4 = 08)

- Life cycle of round worm.
- Differences between *Taenia solium* and *Taenia saginata*
- Principle of moist heat sterilization
- Koch's postulates

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JANUARY/ FEBRUARY- 2018
MICROBIOLOGY
PAPER - FIRST

[Time allotted: Three hours]

[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)

SET - D

- | | |
|--|---|
| <p>1. J chain is present in:</p> <ol style="list-style-type: none"> IgA IgG Both of the above None of the above <p>2. The organ of adhesion of bacteria is:</p> <ol style="list-style-type: none"> Capsule Slime Flagella Fimbriae <p>3. Gloves are discarded in:</p> <ol style="list-style-type: none"> Blue bin Yellow bin Black bin Metal bin <p>4. Tail tip contains two nuclei in case of microfilaria of:</p> <ol style="list-style-type: none"> <i>Wuchereria bancrofti</i> <i>Loa loa</i> <i>Brugia malayi</i> <i>Oncocerca volvulus</i> <p>5. Biological controls used in an autoclave are the spores of:</p> <ol style="list-style-type: none"> <i>Bacillus stearothermophilus</i> <i>Clostridium tetani</i> <i>Bacillus cereus</i> <i>Clostridium welchi</i> <p>6. Definitive host of <i>Echinococcus granulosus</i> is:</p> <ol style="list-style-type: none"> Dog Sheep Cattle Man <p>7. Which of the following is not bile stained?</p> <ol style="list-style-type: none"> Eggs of <i>Trichuris</i> <i>Taenia</i> Eggs of <i>Ascaris</i> Eggs of Hook worm <p>8. Steam sterilization at 100°C for 20 minutes on three successive days is known as:</p> <ol style="list-style-type: none"> Tyndallisation Inspissation Pasteurisation Vaccine bath | <p>9. Di George syndrome is due to:</p> <ol style="list-style-type: none"> B cell defect T cell defect Defect in complement system Defect in phagocytosis <p>10. The chemical nature of an antigen is:</p> <ol style="list-style-type: none"> Protein Polysaccharide Both a & b None of the above <p>11. Which of the following media is sterilized by inspissation?</p> <ol style="list-style-type: none"> Blood agar Loeffler's serum slope Peptone water MacConkey's agar <p>12. Bacterial loop is sterilized by:</p> <ol style="list-style-type: none"> Hot air oven Inspissation Flaming Autoclave <p>13. Clinical infection leads to:</p> <ol style="list-style-type: none"> Active natural immunity Active artificial immunity Passive natural immunity Passive artificial immunity <p>14. Largest trematode is:</p> <ol style="list-style-type: none"> <i>Fasciolopsis hepatica</i> <i>Fasciolopsis buski</i> <i>Clonorchis sinensis</i> <i>Schistosoma hematobium</i> <p>15. The heaviest class of immunoglobulin is:</p> <ol style="list-style-type: none"> IgA IgM IgG IgE <p>16. Delayed hypersensitivity is mediated by:</p> <ol style="list-style-type: none"> Macrophages T lymphocytes B lymphocytes NK cells |
|--|---|

**MICROBIOLOGY
PAPER – SECOND****Note:** Attempt all questions.

Draw suitable diagrams wherever necessary.

Q. 2. Give reasons why:**(1 x 4 = 04)**

- In spite of being non-specific, VDRL test is done for syphilis and not TPI.
- In leprosy hospitals, lepromin positive persons are employed not lepromin negative.
- Intestinal candidiasis is seen after prolonged use of broad spectrum antibiotics.
- The risk of transmission of HIV is more among homosexuals as compared to heterosexuals.

Q. 3. Problem based question:**(1 x 4 = 04)**

A 10 year old child presented with severe dehydration and passage of rice water stools and vomiting for one day.

- What is most probable causative organism?
- Which selective medium will be used for stool culture?
- Name one enrichment medium for the organism
- What is the mainstay of treatment?

Q. 4. Write short notes on:**(2 x 4 = 08)**

- Lesions caused by *Candida*
- Window period
- Toxins produced by *Streptococcus pyogenes*
- Ty21a vaccine

Q. 5. (i) Describe general properties of viruses. How do you classify them?**(04)**

(ii) Enumerate 3 bacteria causing UTI. What instructions will you give to a female patient regarding collection of urine specimen for culture?

(04)**Q. 6. Write in brief:****(2 x 4 = 08)**

- Appearance of *Corynebacterium diphtheriae* in Albert stain
- Colony morphology of mycoplasma
- Make diagrams of different spirochaetes
- Viruses causing hepatitis

M.B.B.S. SECOND PROFESSIONAL EXAMINATION, JANUARY/ FEBRUARY- 2018**MICROBIOLOGY
PAPER – SECOND**

[Time allotted: Three hours]

[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)**SET - C**

1. Which of the following fungi is **not** a mold?
 - a. *Aspergillus*
 - b. *Penicillium*
 - c. *Cryptococcus*
 - d. *Mucor*
2. Microconidia are absent in:
 - a. *Trichophyton*
 - b. *Microsporum*
 - c. *Epidermophyton*
 - d. None of the above
3. Which is the spike Ag of HIV 1?
 - a. gp 120
 - b. gp 140
 - c. gp 41
 - d. gp 36
4. How many serotypes of dengue virus are there?
 - a. 4
 - b. 5
 - c. 6
 - d. 7
5. Which virus is acid labile?
 - a. Polio virus
 - b. ECHO virus
 - c. Coxsackie virus
 - d. Rhino virus
6. Diene's phenomena is observed with:
 - a. *Proteus*
 - b. *Shigella*
 - c. *Salmonella*
 - d. *Pseudomona*
7. Germ tube formation is seen in:
 - a. *Trichosporon*
 - b. *Cryptococcus*
 - c. *Candida*
 - d. None of the above
8. Which of the following fungi is dimorphic?
 - a. *Histoplasma*
 - b. *Sporothrix*
 - c. *Blastomyces*
 - d. All of the above
9. Which of the following fungi is responsible for mucormycosis?
 - a. *Rhizopus*
 - b. *Mucor*
 - c. *Absidia*
 - d. All of the above
10. When Gram negative bacteria are exposed to lysozyme the peptidoglycan layer is lost but the outer membrane remains and cells become:
 - a. Protoplast
 - b. Spheroplast
 - c. Leucocyte
 - d. None of the above
11. *Bacillus anthracis* has a proteinaceous capsule composed of:
 - a. Poly D glutamic acid
 - b. Poly D aspartic acid
 - c. Both a & b
 - d. None of the above
12. McFadyean reaction is seen in:
 - a. *Bacillus anthracis*
 - b. *B. cereus*
 - c. *B. subtilis*
 - d. All of the above
13. In viral meningitis:
 - a. Protein increases sugar and cell count decreases.
 - b. Protein increases and sugar remain normal.
 - c. Protein and glucose both increases.
 - d. None of the above.
14. For growth *Haemophilus influenzae* requires:
 - a. X factor only
 - b. V factor only
 - c. X & V factors
 - d. Neither X nor V factors
15. Which one is an enveloped virus?
 - a. Polio
 - b. Herpes
 - c. Adeno
 - d. All of the above
16. Which virus is susceptible to chloroform?
 - a. Measles
 - b. Rhino
 - c. Polio
 - d. Adeno