TEST-2

Special Bacteriology

1. A 60 year old laborer presents with a history of chronic productive cough with occasional bouts of hemoptysis. Chest X ray reveals a cavitation lesion in apical region of right lung. The organism was found out to be acid fast bacilli. A skin test was performed for diagnosis that turned out to be positive.
   a. Name the causative agent and the disease. 1
   b. What is the skin test? Describe with its interpretations. 2
   c. Discuss the laboratory diagnosis. 2
2. A young fashion designer presents to the urology ward with complaints of creamy yellowish urethral discharge and painful micturition. He otherwise is in good health. Gram stained smear of the discharge revealed pus cells with intracellular Gram negative cocci.
   a. How will you proceed in the laboratory for its diagnosis? 1.5
   b. What are the diseases caused by this organism according to pathogenesis, in adults and infants? 2
   c. Name other Gram negative cocci, and the diseases caused by it? 0.5
   d. Name organism causing meningitis in various age groups. 1
3. A 29 year female is brought to the hospital with history of delirium, sustained fever of up to 102°C for last 2 days, headache, myalgia and constipation began 11 days back. Physical examination revealed enlarged spleen, liver and diffused abdominal tenderness and peculiar rose spots on chest and neck. Colonies showed Gram negative non lactose fermenting rods.
   a. Which is the most likely organism? 0.5
   b. What samples are the most appropriate for its diagnosis? 0.5
   c. What is the pathogenesis? 2
   d. How will you diagnose this organism in laboratory? 2
4. a. Name the Chlamydia of medical importance. What are the diseases caused by Chlamydia trachomatis? 2.5
   b. Classify Staphylococci. How will you differentiate different species in the laboratory? 2.5
5. A young boy developed chest pain, chorea and migratory polyarthritis 2 weeks after an acute attack of pharyngitis. Blood culture revealed Group A, Beta hemolytic Streptococci.
   a. Name the causative agent and the disease.
   b. Explain the pathogenesis of the disease 2
   c. What is the laboratory diagnosis of this organism? 2

Arslan Bhatti
F17-063

2019

TEST-2
Special Bacteriology

UHS 233

1. A 60 year old laborer presents with a history of chronic productive cough with occasional bouts of hemoptysis. Chest X ray reveals a cavitation lesion in apical region of right lung. The organism was found out to be acid fast bacilli. A skin test was performed for diagnosis that turned out to be positive.
   a. Name the causative agent and the disease. 1 — myco bacterial tuberculosis
   b. What is the skin test? Describe with its interpretations. 2
   c. Discuss the laboratory diagnosis. 2

UHS 232 —

2. A young fashion designer presents to the urology ward with complaints of creamy yellowish urethral discharge and painful micturition. He otherwise is in good health. Gram stained smear of the discharge revealed pus cells with intracellular Gram negative cocci.
   Neisseria Gonorrhoae
   a. How will you proceed in the laboratory for its diagnosis? 1.5 — N. gonorrhea
   b. What are the diseases caused by this organism according to pathogenesis, in adults and infants? 2
   c. Name other Gram negative cocci, and the diseases caused by it? 0.5
   d. Name organism causing meningitis in various age groups. 1

May 239 UHS

3. A 29 year female is brought to the hospital with history of delirium, sustained fever of up to 102°C for last 2 days, headache, myalgia and constipation began 11 days back. Physical examination revealed enlarged spleen, liver and diffused abdominal tenderness and peculiar rose spots on chest and neck. Colonies showed Gram negative non lactose fermenting rods.
   a. Which is the most likely organism? Salmonella typhi 0.5
   b. What samples are the most appropriate for its diagnosis? 0.5
   c. What is the pathogenesis? 2
   d. How will you diagnose this organism in laboratory? 2
4. a. Name the Chlamydia of medical importance. What are the diseases caused by Chlamydia trachomatis?
   b. Classify Staphylococci. How will you differentiate different species in the laboratory? 2.5
5. A young boy developed chest pain, chorea and migratory polyarthritis 2 weeks after an acute attack of pharyngitis. Blood culture revealed Group A, Beta hemolytic Streptococci. S. Pyogene — Acute Pharyngitis

   Staphylococcus Pyogenes

   a. Name the causative agent and the disease. → Rheumatic fever 1
   b. Explain the pathogenesis of the disease. 2
   c. What is the laboratory diagnosis of this organism? 2

AZRA NAHEED MEDICAL COLLEGE

Pathology (Microbiology) Class Test-1

Subject: Pathology (General Microbiology) Total Marks: 25

Resource person: Dr Tahir Majeed/ Dr Sadia Ikram Obtained Marks:

Time Allowed: 45 minutes

Short Essay Questions (SEQ's)

(a) Enumerate the differences between endotoxins and exotoxins? (3)
(b) Name at least three bacteria that produce exotoxins. (2)

2. (a) Draw and label the cell walls of Gram positive and Gram negative bacteria. (3)
(b) Why Gram positive and Gram negative bacteria appear different on Gram staining? (2)

3. (a) Enumerate various methods of sterilization. (2)
(b) Which is the best method of sterilization? What is its principal and procedure? (3)

4. (a) Enumerate the various Antigen-Antibody tests. (2.5)
(b) What is meant by ELISA? Write down its principal. (2.5)

5. (a) What are the different targets of action of antibiotics? Code at least one example for each. (2.5)

(b) Enumerate the four basic mechanisms of resistance to antibiotics with examples. (2.5)

Arslan Bhatti

F17-063

4. A shepherd presented with painless ulcer with a black scab with local edema on his foot. (Malignant pustule), ending up in bacteremia. His blood culture revealed Gram positive spore forming aerobic rod. This organism is also used for bioterrorism.
   a. Name the causative agent involved. (0.5) Bacillus Anthracis
   b. What are the three forms of disease caused by this organism? (1.5)
   c. Discuss the pathogenesis. (2)
   d. Name the organism causing diarrhea:
      i. Associated with eating reheated fried rice (0.5) Bacillus cereus
      ii. Associated with eating canned food (0.5) L-monocytes
5. A 3-year-old girl was brought to the emergency room by her parents because of fever and loss of appetite for past 24hrs and difficulty in arousing her for the past 2 hours. Her temperature was 39.5°C, pulse 130/min, respiration 24/min. Blood pressure was 110/60mmhg. Lumbar puncture was performed in less than 30 minutes of patient's arrival. CSF aspirated was cloudy. Gram staining showed neutrophils along with gram negative diplococci. → Neisseria meningitidis
   a. Name the disease & the causative agent. (1)
   b. What are the differences in the CSF of viral, bacterial and tuberculous meningitis? (2)
   c. Name one organism each causing meningitis in following age groups:
      - Neonates
      - children and Adults (1)
   d. Name the selective media and one biochemical test used for its diagnosis. (1)

Q4b: Bacillus Anthracis = cutaneous Anthracis
Bacillus cereus = food Poisoning

AZRA NAHEED MEDICAL COLLEGE

MBBS 3rd YEAR (Session 2013-14)

(Microbiology Class Test

Subject: Pathology (Microbiology) Total marks: 25
Resource Person: Prof. Ishtiaq Ahmad / Dr. M. Tahir Majeed
Time Allowed: 45 Minutes Obtained Marks:
Dated: 03.02.2014

ATTEMPT ALL THE QUESTIONS:

SEQ's

1. Enumerate the diseases caused by different species of Clostridium.
2. What is the pathogenesis of tetanus? (5)
3. Classify Mycobacterium. What is the pathogenesis of primary ... (5)
4. Classify *Staphylococci*. Enlist the diseases caused by *Staphylococcus aureus*. (5)
5. What diseases are caused by *Streptococcus pyogenes*? (5)

(1)

Name	diseases
1- C. Tetani	Tetanus.
2- C. Botulinum	Botulism
3- C. Perfringes.	Gas gangrene + food poisoning.
4- C. difficile	pseudomembranous colitis.

(2) S. aureus.
- scalded skin syndrome.
- Toxic shock syndrome.
- Pyogenic infections. (endocarditis, septic arthritis, osteomyelitis)
- abscesses.
- Food poisoning.

(5) Pyogenic - impetigo.
- pharyngitis.
- sepsis.

Toxigenic :- Scarlet fever.
Toxic shock.

immune mediated rheumatic fever.
acute glomerulonephritis.

A Agalactiae :- neonatal sepsis, meningitis.
D Faecalis :- urinary tract inf. + endocarditis.
G - S : endocarditis.
Pneumo : pneumonia + meningitis.
Viridans : endocarditis

RILAN
Bhatti
F17-063

Test 3

SPECIAL MICRIOBIOLOGY-1

SEQ PAPER

237 UHS

1. A patient with suspected brain abscess is admitted to the neurosurgery ward. The abscess was drained and the pus was sent for culture and sensitivity. The isolate on the blood agar is beta hemolytic, gram positive cocci with positive coagulase and catalase test.
   a. What is the likely organism? Name four other diseases produced by this organism. (1+2) → Staph Aureus → skin infection, food poisoning, scalded skin syndrome, septicemia
   b. Name the coagulase negative bacteria and the diagnostic test for differentiating them. (2) S-Epidermidis, S-saprophyticus
2. A 14 year old girl develops a rapidly spreading, painful, erythematous rash on her leg. The rash was warm and tender and her temperature was 38°C. Gram positive cocci were seen in the aspirate from the lesion. Culture of the aspirate on the blood agar grew colonies surrounded by β- hemolysis. Growth of the organism is inhibited by bacitracin.
   a. What is your most likely diagnosis? (2) Strept. Agalactiae
   b. Enumerate two immunologic diseases caused by it and their mechanism. (3)
3. Grandmother in village applied cow dung to umbilical stump of a new born child who then developed strong muscular spasms; arching of back & died of respiratory failure week later. 2 b UHS
   a. Name the most likely etiological agent. What is the pathogenesis of this disease? (0.5+ 3)
   b. Name other 3 spore forming species of this genus & bacterial disease caused by them.

→ Clostridium tetani

C. perfringins → gas gangrene & food posoning

C. difficile → pseudomembranous colitis

C. botulinum → Botulism

Strept

Azra Naheed Medical College

MBBS 3rd Year Class (Session 2013-14)

Class Test 5-A (Microbiology SEQs) Dated: 07-04-2014

Name: Rawshan Roll No: 12186

Total Time: 25 Minutes Total Marks: 15

Q.1. a. Enumerate the pathogenic *Escherichia coli* and mention the diseases caused by them. (2)

b. Write down the pathogenesis of bloody diarrhea caused by *Escherichia coli*. What are the complications. (3)

Q.2. a. Give an account of the laboratory diagnosis of typhoid fever in the first, second and third week of the disease. (3)

b. Enumerate the causative agents of Urinary tract infection. (2)

Q.3. a. Define and classify Enterobacteriaceae. (2)

b. Write down the pathogenesis of meningitis caused by *Neisseria meningitides*. (3)

4. **An aged man comes to the hospital complaining of upper abdominal pains, which become w after a meal. Doctor prescribed an H2 blocker. Biopsy of the stomach mucosa revealed Gram negative curved bacteria. He also had urease breath test positive.**
   a. Name the causative agent. (0.5)
   b. Name four important virulence factors of this bacterium playing vital role in pathogenesis. (1)
   c. Enlist the invasive and non-invasive tests used for its diagnosis. (2)
   d. What is urea breath test? (1)
   e. Name two other urease positive organisms. (0.5)

5. **An elderly diabetic woman, who recently began swimming to control her weight, complains of painful discharge from her left ear. Physical exam shows extreme tenderness of the left tragus. A swab culture of the ear reveals blue-green colonies emitting a fruity odor.**
   a. Name the causative agent. (0.5)
   b. Name the pigments produced by this bacterium (1)
   c. Which lung disease is most commonly associated with this bacterium? (0.5)
   d. Name four other diseases caused by it. (1)
   e. Discuss TSI agar and its interpretations. (2)

6. **A woman who recently returned from a trip to South America complains of a persistent high fever, malaise & constipation for over a week. Fever began slowly and climbed its way up to 41°C. Physical exam revealed enlarged spleen and tender abdomen with rose spots on her chest and abdomen. Gram negative non-lactose fermenter was obtained from the stool culture.**
   a) Which organism is most likely to be identified in her stool? (0.5)
   b) What is the pathogenesis of the disease? (1.5)
   c) Discuss the laboratory diagnosis. (2)
   d) Classify Gram negative rods on the basis of lactose fermentation. (1)

Department of Pathology
Azra Naheed Medical College
Grand Test-4, 02 May 2017
MBBS 3rd Year (SEQ)
(Special Bacteriology-II)

Time Allowed: 60 min **Total Marks: 37**

Name: Abrar
Roll No: 11004
Date: 5-2-17

Instructions:

3. **All objective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.**
4. **Any cuttings or overwriting in answering the objective part will not be accepted and no marks will be given even if the answer is correct.**

1. **A 6-year-old girl was brought to the emergency room by her parents because of fever, loss of appetite for the past 24hrs and difficulty in arousing her for the past 2 hours. Her temperature was 39.5°C, pulse 130/min, respiration 24/min and Blood pressure was 110/60mmhg. Lumbar puncture was performed. The CSF aspirated was cloudy. Gram staining showed numerous neutrophils along with gram negative diplococci.**
   a. Name the disease & the causative agent. (1)
   b. What are the differences in the CSF of viral, bacterial and tuberculous meningitis? (2)
   c. Name one organism each causing meningitis in following age groups:
      - Neonates
      - children and Adults (1)
   d. Enumerate two differences between gonococci and meningococci. (1)

2. **A 15-year-old girl presents with abdominal pain and bloody diarrhea after eating a hamburger at a barbeque party one day back. She was afebrile but on rectal examination there is gross blood. Stool analysis was positive for RBCs. Her blood examination revealed abnormal renal function tests. Culture revealed Gram negative lactose fermenting rod.**
   a. What is the most likely organism and its strain causing the disease? (1)
   b. Name the most unique complication of this infection and its pathogenesis? (2)
   c. What are the common characteristics of family Enterobacteriaecae? (2)

3. **After recent flooding in a slum area of Faisalabad, there was a large influx of patients in the emergency department of DHQ hospital, with specimens sent to the laboratory having rice water stools.**
   a. Name the etiological agent and the disease. (1)
   b. What is the pathogenesis of this disease? Name one other bacterium having the same mechanism. (2)
   c. Name the biotypes and the serotypes of this bacterium. (1)
   d. Discuss its laboratory diagnosis. (1)

4. A 50 year man living in an old house presented with localized abscess. History revealed recurrence of these abscesses. Gram staining revealed Gram positive cocci in grape like clusters, showing coagulase test positive.
   a) Name the causative agent. (0.5)
   b) Enlist at least four virulence factors of this organism. (1)
   c) What are MRSA and its treatment? (1.5)
   d) Discuss the laboratory diagnosis of this organism. (2)

5. A shepherd presented with painless ulcer with a black scab with local edema on his foot. (malignant pustule), ending up in bacteremia. His blood culture revealed Gram positive spore forming aerobic rod. This organism is also used for bioterrorism.
   a) Name the causative agent involved. (0.5)
   b) What are the three forms of disease caused by this organism? (1.5)
   c) Discuss the pathogenesis. (2)
   d) Name the organism causing diarrhea:
      i. Associated with eating reheated fried rice (0.5)
      ii. Associated with eating canned food (0.5)

6. a) Give the pathogenesis of diphtheria toxin. 1.5
   b) What are clue cells and present in which disease? (1)
   c) Name one weakly acid fast Gram positive, filamentous rod. (0.5)
   d) Tabulate the differences between bacterial vaginosis, fungal and parasitic vaginitis. (2)

Department of Pathology
Azra Naheed Medical College
Grand Test-3, 07 February 2017
MBBS 3rd Year (SEQ)
(Special Bacteriology)

Time Allowed: 60 min **Total Marks: 30**

Name: _____

Roll No: _____

Date: _____

Instructions:

1. **All subjective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.**
2. **Neat hand writing and use of margins will increase the outlook and presentation of your paper.**

Attempt all Questions. Each Question carries 5 marks

1. A 3 days old neonate developed high grade fever, neck stiffness and became semi conscious. Gram stain of CSF showed Beta hemolytic- Lancefield Group B, gram positive cocci:
   a) Name the causative agent and the condition? 1
   b) Give the lab diagnosis of this condition. 2
   c) State two causes of meningitis in adults. 1
   d) What is CAMP test? 1

2. A 16 years old boy presented in emergency with respiratory failure and spastic paralysis. His attendants gave the history of road side accident three days ago.
   a) What is the diagnosis and the causative agent? 1
   b) Classify Gram positive rods. 1
   c) Discuss the pathogenesis of this disease. 2
   d) Name the agent causing pseudomembranous colitis. 1

3. A young boy developed chest pain, chorea, migratory polyarthritis 2 weeks after an acute attack of pharyngitis. Blood culture revealed Beta hemolytic Streptococci, Bacitracin sensitive.
   a) Name the causative agent and the disease. 1
   b) Explain the pathogenesis and laboratory diagnosis of this disease. 3
   c) What is Lancefield grouping of Beta hemolytic Streptococci? 1

5. A young boy was received in emergency department with history of fever, malaise, headache and cough. Along with that he had severe joint and muscle pains. On examination a macula-papular rash was observed on his body. Labs revealed decreased platelet count. The most likely virus would be:
   a. What is the most likely diagnosis? (0.5)
   b. What is pathophysiology of the disease? Give its laboratory diagnosis. (03)
   c. Draw a graph showing the serological markers of Hepatitis B virus along with their interpretations. (1.5)

6. 30 years old male presented to emergency with history of low grade fever, cough and weight loss for the past 2 months. The cough is productive with streaks of blood in it. AFB smear was positive.
   a. Based on the findings which infectious disease is the patient suffering from? Name the causative agent. (0.5)
   b. Give its laboratory diagnosis. (1.5)
   c. What is tuberculin skin test and its interpretations? (1.5)
   d. Enlist the specific and non-specific test used for diagnosis of syphilis. (1.5)

7. By which method of sterilization we can sterilize the culture Medias used in the laboratory and operation theaters? What is its principle and procedure? (0.5+1)
   a. Compare the cell walls of gram positive and gram negative bacteria. (02)
   b. Tabulate the differences in the exotoxins and endotoxins. (1.5)

8. a. What do you understand by the normal flora of the body? Name the members of the normal flora of genito-urinary before and after puberty. (02)
   b. What are carriers? (0.5)
   a. Classify bacteria on the basis of O_2 requirements with examples. (1.5)
   b. What is the process by which anaerobic bacteria obtain their nutrition? Briefly explain. (02)
   c. Name two enriched media. (01)

Department of Pathology
Azra Naheed Medical College
Half book Test, 22nd August 2019
MBBS 3rd Year (SEQ)
(Microbiology)

Time Allowed: 60 min **Total Marks: 40**

Name: _____

Roll No: _____

Date: _____

Instructions:

1. **All subjective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.**
2. **Neat hand writing and use of margins will increase the outlook and presentation of your paper.**

Attempt all Questions. Each Question carries 5 marks

1. A 30 year old law student after 4 days of nasal surgery developed a sunburn-like rash, headache, muscle aches, and abdominal cramps with diarrhea and blood pressure of 70/40 mm. On examination she was found to have a pack in her nose. Her renal function tests were also abnormal. Gram stain reveals Gram positive cocci in clusters, having catalase and coagulase test positive.
   a. What is the likely organism? Is the disease caused by exotoxin or endotoxin? Name the exotoxins produced by this bacterium and typical diseases caused by them. (03)
   b. Name one other biochemical test used for its diagnosis. (0.5)
   c. Enumerate the virulence factors of this bacterium. (1.5)
2. A 50 years old hiker went to a hiking trip. After few days he developed periodic bouts of fever with chills & rigors occurring every 36- 48hrs.He was also having black colored urine.
   a. What is the most likely diagnosis? Name the specie of the organism causing the disease. (0.5)
   b. How will u diagnose this case in laboratory? (02)
   c. Name the parasites causing hemolytic anemia, megaloblastic anemia and iron deficiency anemia. (1)
   d. Tabulate the differences between amoebic and bacillary dysentery. (1.5)
3. A young female with cystic fibrosis got exacerbation of bronchitis with cough. Abundant greenish mucoid colonies were grown from sputum after 24 hours of incubation, which were found out to be Gram negative rods.
   a. What is the likely diagnosis? Name one biochemical test used for its diagnosis. (0.5)
   b. Classify Gram negative rods. (1.5)
   c. Name 4 organism causing food poisoning. (01)
   d. Name 5 strains of E.coli. Explain the mechanism of action of toxin of E.coli. (02)
4. A 20-year-old female presents at her gynecologist's office with itching and burning pain of the vulva and vagina. A white discharge is also apparent. When cultured, colonies appeared curdy white and germ tube test was positive.
   a. What are the most likely etiology and infection?
   b. Name other diseases caused by the organism. (01)
   c. Name a fungus causing meningitis. (1.5)
   d. What are dermatophytes? Give an account of diseases caused by them. (0.5) (02)

Department of Pathology
Azra Naheed Medical College
Grand Test,7 (07 May 2019)
MBBS 3rd Year (SEQ)
(Special Microbiology)

Time Allowed: 60 min **Total Marks: 30**

Name: _____

Roll No: F16-063

Date: _____

Instructions:

1. **All subjective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.**
2. **Neat hand writing and use of margins will increase the outlook and presentation of your paper.**

Attempt all Questions. Each Question carries 5 marks

Q1. Several students of a primary school in a village fell ill. All of them were admitted to local hospital following vomiting and diarrhea. Purging was effortless and the feces were of fishy smell and rice-watery.

a) What is your diagnosis?
b) What is its mode of transmission?
c) What is the pathogenesis of cholera?
d) What are the serotypes and biotypes of this bacteria.

Q2.A 4-year old boy was brought by her mother to emergency department with bloody diarrhea, fever and vomiting for about 24 hours. The child has not passed any urine for about 12 hrs. The child had a lunch of beef burger, fries and cola 4 days earlier. On examination, the child had a temperature of 39°C and showed physical signs of dehydration. Blood examination showed evidence of greatly reduced kidney function and lysed red blood cells.

a) What is the most likely diagnosis and causative agent? 01
b) Give pathogenic factor and its mechanism in causing the problem. 02
c) Enlist the characteristics of family enterobactericiae. 02

Q3.A 29 year old female is brought to the hospital with history of delirium, sustained fever of up to 102 for last two days. Fever, constipation and myalgia which began 11 days back. Physical examination revealed enlarged spleen and liver with diffuse abdominal tenderness and rose spots on chest and back. Colonies of non lactose fermenting gram negative rods are seen. Physician asks for stool sample to complete the diagnosis.

a) Which organism is most likely to be identified in her stool? 01
b) What is the pathogenesis of the disease? 02
c) Discuss the laboratory diagnosis. 02

Q4. A 40 years old shepherd of sheep presents with upper right quadrant pain and appeared slightly jaundiced. A stool exam was negative for ova and parasite but a CT scan reveals a large 14 cm cyst that appears to contain fluid, in the right lobe of the liver.

a) What is the most likely diagnosis? (1)
b) Name the parasite responsible for this lesion. (1)
c) Draw and label its life cycle. (3)

Q5. a) Name the parasites causing hemolytic anemia, megaloblastic anemia and iron deficiency anemia. (1.5)
b) Tabulate the differences between amoebic and bacillary dysentery. (02)
c) Draw and label the ova/ trophozoite of following parasites: (1.5)

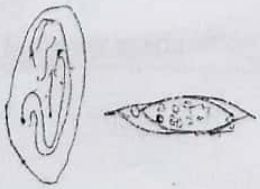
- Trichuris triciura
- Giardia lamblia
- Entrobius vermicularis

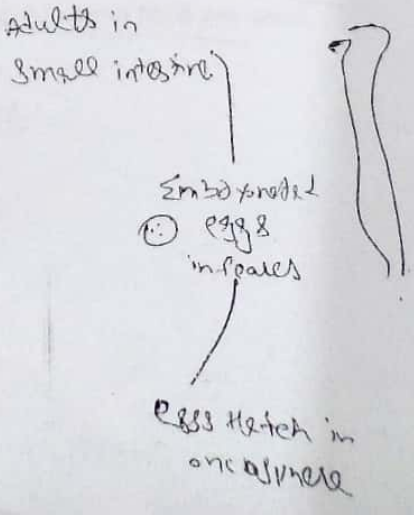
Plasmodium.

Hemolytic Anemia → Falciparum.

Megaloblastic Anemia → Diphyllobothrium latum

Iron Deficiency Anemia → Hook Worm.





2

Department of Pathology
Azra Naheed Medical College
Grand Test- , 2nd July 2019
MBBS 3rd Year (MCQ)
(Parasitology, Genetics)

Time Allowed: 50 min **Total Marks: 25**

Name: _____

Roll No: _____

Date: _____

Instructions:

1. **All subjective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.**
2. **Neat hand writing and use of margins will increase the outlook and presentation of your paper.**

Attempt all Questions. Each Question carries 5 marks

Q1. a) What is the difference between autosomal recessive and autosomal dominant disorder? (2.5)

b) Enlist any four autosomal dominant and autosomal recessive disorders respectively. (2.5)

Q2. A mother notices that her 1 year old child is unresponsive to the environment, abundant neck skin, transverse palmar crease, flat facial profile, epicanthic folds, and wide set ears.

a) What genetic disorder does this child have? Down syndrome (1)
b) What is the pathogenesis? (4)

Q3. A 20 years old farmer develops periodic bouts of fever with chills and rigors occurring every 36-48 hours. He is anemic on appearance and has splenomegaly. His peripheral smear shows cresenteric structures.

a) What is the most likely diagnosis? (1)
b) How will u diagnose this case in laboratory? (2)
c) What are its complications? (2)

Q4. A 16 years old boy presented in emergency with respiratory failure and spastic paralysis. Hi attendants gave the history of road side accident three days ago.

a) What is the diagnosis and the causative agent? 01
b) Classify Gram positive rods 1.5
c) Discuss the pathogenesis of this disease. 1.5
d) Name the agent causing pseudomembranous colitis. 01

Q5.A 2 year old boy presented in emergency with high grade fever headache, stiff neck and altered level of consciousness. Lumber puncture was done and gram staining of CSF showed gram negative kidney bean shaped cocci in pairs.

a) Give the diagnosis? 01
b) How this organism is identified in laboratory? 02
c) What are the virulence factors produced by this organism? 02

Q6.An aged man comes to the hospital complaining of upper abdominal pains, which become worse after a meal. Knowing the patient's history, the doctor is about to prescribe an H2 blocker and send the patient on his way, just as he has done for many patients before this one. However, biopsy of the stomach mucosa revealed Gram negative curved bacteria. He also had urease breath test positive.

a) Name the causative agent. 0.5
b) Name important virulence factors of this bacterium playing vital role in pathogenesis. 01
c) Enlist the invasive and non-invasive tests used for its diagnosis. 02
d) What is urea breath test? 01
e) Name two other urease positive organisms. 0.5