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: 30

Name: Amina

Roll No: 007

Date: 2.10.17

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) N.Meningitidis
   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.** hemolytic uremic Syndrome
   a. What is the most likely organism and its strain causing the disease? (1) Entero hemorrhagic E.coli.
   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.** Vibrio cholera.
   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)

H. Pylori.

4. An aged man comes to the hospital complaining of upper abdominal pains, which become worse 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) — Pv — pseudomonas aeregenosa.
   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) — salmonella Typhi.
   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-5, 17 April 2018
MBBS 3rd Year (SEQ)
(Special Bacteriology-2)

Time Allowed: 50 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 42- year old male presented with a history of productive cough, night sweats, low grade fever and weight loss for the last 3 months. Chest X- ray reveals opacity in the upper zone of the left lung. Histopathology reveals granulomas.
   a) What is the most likely disease? T.B 1
   b) Name the special staining technique used for the diagnosis. 1
   c) Discuss the laboratory diagnosis of this case. 3

2. A 25-year-old woman had a papular rash on her trunk, arms and palms with no itching. Vaginal examination revealed two flat, moist, slightly raised lesions on the labia. Specimen from a labial lesion was examined in a dark field microscope revealing spirochetes.
   a) What is the most likely diagnosis and the causative agent? syphilis 1
   b) Explain the term prozone phenomenon. 1
   c) Name the specific and non-specific tests for the diagnosis of the above mentioned case 3

3. A 29-year-old woman and her husband seek your consultation for an inability to conceive. After a thorough workup, you believe the cause to be an undiagnosed infection in the woman. Examination reveals mild cervical motion tenderness; Gram stain of cervical secretions shows neutrophils but no organisms. The causal bacterium is an obligate intracellular parasite?
   a) Enlist the disease associated with different immune types of Chlamydia trachomatis. 3
   b) Diagrammatically explain the life cycle of Chlamydia. 1
   c) Name the bacteria's causing plague and Rocky Mountain spotted fever. 1

4. Your patient is a 75 year old woman with history of cigarette smoking, who now has a history of fever and cough having yellowish sputum, most probably having pneumonia. Gram stain reveals small Gram negative rods having no growth on blood agar. It grows on chocolate gar having X and V factors.
   a) Name the causative agent H. influenza. 1
   b) Name other diseases caused by this bacterium. 2
   c) Enlist three important causes of meningitis. 1
   d) Name the bacterium causing whooping cough. 1

5. A 27 years old sexually active female present to a gynecology OPD with complaints of white painful vaginal purulent discharge along with fever and dysuria and lower abdominal pain. She also complained of irregular menstruation. She is found to have multiple sexual partners. Diplococcus Gram negative bacteria are found on microscopic examination which are found to be growing effectively on choclolate agar.

a. What is the bacterium involved & the disease this patient is currently having? N. Gonerrhea, 1
b. What are the diseases caused by this bacterium in neonates and males? 2
c. What is principle of oxidase test? Name two other oxidase positive organisms. 2

6. A 30 year old male complained of fever, night sweats, fatigue, weight loss and shortness of breath for several months. A chest X-ray revealed prominent bilateral hilarlymphadenopathy. Physical examination revealed cervical lymphadenopathy. A cervical node biopsy was performed which revealed numerous granulomas.

a. Which disease the patient is suffering from? T.B 1
b. Explain the tuberculin test? 2
c. Name the non-cultivable specie of mycobacterium and the staining technique used for its diagnosis. 2

Department of Pathology
Azra Naheed Medical College
Grand Test-4, 08 March 2018
MBBS 3rd Year (SEQ)
(Hemodynamics & Special Bacteriology-2)

Time Allowed: 50 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 45 year old patient, who is a quadriplegic with an indwelling urinary tract catheter, was admitted in Male Medical Ward. He is diabetic and hypertensive. During his stay in hospital he develops bed sores on his both heals. A swab was sent to the lab for culture /sensitivity. A growth of non lactose fermenters obtained with swarming. Oxidase test was negative, staining revealed Gram negative bacilli.

   a. Name the causative agent. (1) Proteus Mirabilis.
   b. Is this bacterium motile or non-motile? (1)
   c. Name two other causes of urinary tract infection. (1)
   d. Name two biochemical tests used for its identification. (1)
   e. What is the principle of urease test? (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 is afebrile but on rectal examination there is gross blood. Stool analysis is positive for RBCs. Culture revealed Gram negative lactose fermenting rods. Her blood examination revealed abnormal renal function tests and hemolysed red blood cells.

   a. What is the most likely organism and its strain causing the disease? (1) Entero hemorrhgic E.coli.
   b. Name the most unique complication of this infection and its pathogenesis? (2)
   c. What are the common characteristics of family Enterobacteriaecae? (2) hemolytic uraemic syndrome.

3. After recent flooding in a slum area of Faisalabad, there is a large influx of patients in the emergency department of DHQ hospital, with specimens sent to the laboratory having rice water stools. cholera.

   a. Name the etiological agent and the disease. (1)
   b. What is the pathogenesis of this disease? Name one other bacterium having same mechanism. (2)
   c. Name the biotypes and the serotypes of this bacterium. (2)

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Pseudomonas aerigenosa.

4. 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. Fearing that the infection could eventually spread to the mastoid bone, her doctor prescribes antibiotic therapy.
   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 two other diseases caused by it. (1)
   e. Discuss TSI agar and its interpretations. (2)

5. A 29-year-old female is brought to the hospital with history of delirium, sustained fever of up to 102°F for the last 2 days, headache, myalgia and constipation which began 11 days back. Physical examination revealed enlargement of spleen as well as the liver, diffuse abdominal tenderness & peculiar 'rose spots' on the chest and neck. Colonies of a Gram-negative non-lactose fermenting rods with H2S production were obtained. The physician asks for a stool sample to complete the diagnosis.
   a. Which organism is most likely to be identified in her stool and the disease? (1)
   b. What is the pathogenesis of the disease? (2)
   c. Discuss the laboratory diagnosis. (2)

Salmonella Typhi

6. a. Define septic shock. (2)
   b. Explain the patho-physiology of shock. (3)

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? ~~Meningitis~~ S. agalactal. 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? c. Tetani. 1
   b) Classify Gram positive rods. 1.5
   c) Discuss the pathogenesis of this disease. 1.5
   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. St. Pyogens. 1
   b) Explain the pathogenesis and laboratory diagnosis of this disease. 3
   c) What is Lancefield grouping of Beta hemolytic Streptococci? 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. staphylococcus aureus
   a) Name the causative agent. (0.5) S. aureus.
   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. anthracis B. anthracis (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) → B. cereus.
      ii. Associated with eating canned food (0.5) → Botulism

pharyngitis
cellulitis.
erysipelas.

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)

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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: 30**

Name: _____

Roll No: _____

Date: _____

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)

H. Pylori.

4. **An aged man comes to the hospital complaining of upper abdominal pains, which become worse 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.** H. Pylori

a. Name the causative agent. (0.5) H. Pylori
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)

(3)

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) Pseudomonas aeruginosa
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)

(3)

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) Salmonella typhi
b) What is the pathogenesis of the disease? (1.5) (1)
c) Discuss the laboratory diagnosis. (2)
d) Classify Gram negative rods on the basis of lactose fermentation. (1)

PATHO

Department of Pathology
Azra Naheed Medical College
Short test-5, 25 July 2017
MBBS 3rd Year (MCQ)
(Special Bacteriology-2 & Parasitology)

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

T.B

1. A 42- year old male presented with a history of productive cough, night sweats, low grade fever and weight loss for the last 3 months. Chest X- ray reveals opacity in the upper zone of the left lung. Histopathology reveals granulomas.
   a) What is the most likely causative agent and the disease? Mycobacterium T.B 2
   b) Name the special staining technique used for the diagnosis. 1
   c) Discuss the laboratory diagnosis of this case. 2

   Ist- Treponema Pallidum.

2. A 25-year-old woman had a papular rash on her trunk, arms and palms with no itching. Vaginal examination revealed two flat, moist, slightly raised lesions on the labia. Specimen from a labial lesion was examined in a dark field microscope revealing spirochetes.
   a) What is the most likely diagnosis and the causative agent? syphilic 1
   b) Explain the term prozone phenomenon. 1
   c) Name the specific and non-specific tests for the diagnosis of the above mentioned case 3

3. A 29-year-old woman and her husband seek your consultation for an inability to conceive. After a thorough workup, you believe the cause to be an undiagnosed infection in the woman. Examination reveals mild cervical motion tenderness; Gram stain of cervical secretions shows neutrophils but no organisms. The causal bacterium is an obligate intracellular parasite?
   a) Enlist the disease associated with different immune types of Chlamydia trachomatis. 3
   b) Diagrammatically explain the life cycle of Chlamydia. 1
   c) Name the bacteria's causing plague and Rocky Mountain spotted fever. 1

...erial growth curve. 3 15-18 19-n

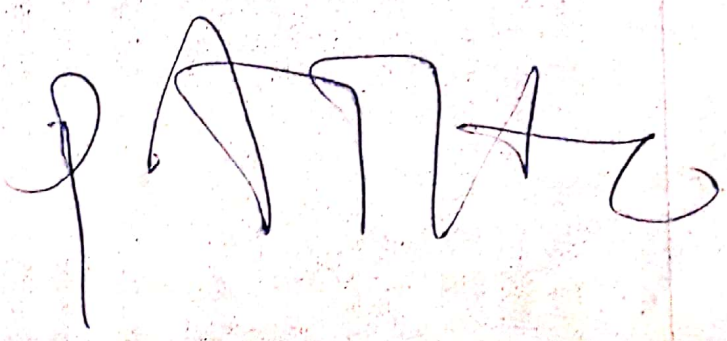
4. Your patient is a 75 year old woman with history of cigarette smoking, who now has a history of fever and cough having yellowish sputum, most probably having pneumonia. Gram stain reveals small Gram negative rods having no growth on blood agar. It grows on chocolate gar having X and V factors. H. Inf.
   a) Name the causative agent. H. influenzae. 1
   b) Name other diseases caused by this bacterium. 2
   c) Enlist three important causes of meningitis. 1
   d) Name the bacterium causing whooping cough. 1

5. A 20 years old farmer develop periodic bouts of fever with chills and rigor occurring 36-48 hours, he is anemic on appearance and has splenomegaly. His peripheral smear show crescenteric structures. Plasmodium Falciparum.
   a) What is most likely diagnosis? (0.5) P. Falciparum.
   b) What are its complications? (1)
   c) How do we diagnose the involved pathogen? (2)
   d) Draw and label life cycle of the pathogen. (1.5)

6. 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 parasites but a CT scan reveals a large 14 cm cyst that appears to contain fluid, in the right lobe of the liver. ~~Taenia~~ Echinococus.
   a) what is most likely diagnosis? Name the parasite responsible for this lesion. (1)
   b) draw and label its life cycle. (2) E. granulusus.
   c) Discuss lab diagnosis. (2)

7. A 37 years old man gets bitten with a desert fly and ends up developing a muco-cutaneous lesion. On aspiration and biopsy of spleen tissue, there were peculiar particles found in large amount within the macrophages.
   a) What is the diagnosis and name of the organism? (1) Leishmania.
   b) What is the species name that causes Visceral counterpart of this disease? (1)
   c) What are LD bodies? (1)
   d) What are the differences between amoebiac and bacilliary dysentery? (2)

8. a. Draw and label life cycle of ascaris lumbricoides..(1.5)
   b. What is cysticercosis. Name the organism causing it. (1.5)
   c. Draw the trophozoite form of Giardia lamblia. (1)
   d. Draw and label the ova of Trichuris and enterob ous vermicularis. (1)



Sardar Ibtasam Jan Baloch

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: _____

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? → cholera caused vibreo cholerae. 01
b) What is its mode of transmission? 01
c) What is the pathogenesis of cholera? 02
d) What are the serotypes and biotypes of this bacteria. 01

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. hemolytic urecemic syndrome

a) What is the most likely diagnosis and causative agent? Entero-hemorrhagic E.coli 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. Typhoid fever.

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

Tetanus

Q4. 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? Clostridium Tetani. 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? N. Meningitidis. 01
b) How this organism is identified in laboratory? 02
c) What are the virulence factors produced by this organism? causes Meningitis. 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. H. Pylori, Peptic ulcer. 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