

Department of Pathology
Azra Naheed Medical College
Send up Examination 2017
2nd Professional MBBS SEQs

Time Allowed: 2 hours

Total Marks: 75

Q-1 A 37 years old male, having Pulmonary tuberculosis has a granuloma formation with a particular form of necrosis evident in the granuloma.

- What is this type of necrosis? 1
- Enlist all necrotic types with 1 example of each. 2
- Write down differences between reversible and irreversible injury 2

Q-2: Write down the mechanism of neutrophil arrival at the site of tissue insult. 2

(b) A 25 year old man is having cavitating lung lesion. Describe the cross talk between macrophage and lymphocyte for formation of a granuloma and draw a granuloma. 2

c-Name two granulomatous lesions 1

Q-3 A 53 years old male had a cut injury on his fore arm which healed over a period of time with formation of scar tissue followed by complete restoration and repair. What is the mechanism of tissue regeneration and repair? 2

b- Enumerate factors affecting wound healing 3

Q-5 A 50 year old lady had severe accident, her pulse was rapid and thready, blood pressure was 100/70. Give the most possible pathophysiological phenomenon occurring in this patient.

Describe its different phases. 2.5

b- Give differences between red and white infarct. What is the fate of an embolus. 1,1.5

Q-6. a- Name two different techniques to diagnose pre birth genetic derangements. 1

b- What are differences between autosomal dominant and autosomal recessive disorders. 1.5

c- Give 4 phenotypical features of Down Syndrome with genetic derangements. 2.5

Q-7 How does a tumour spread from one place to another give diagrammatic representation. 1.5

Note death \rightarrow Hypovolemic

b- What are tumour markers , give 4 tumour markers. 1.5

c- What are paraneoplastic syndromes , give 3 examples 2

Q-8 A 31 years old female, after eating pea nuts developed severe dizziness, head ache and hypotension which resulted in fainting. Patient was rushed to the hospital and doctor diagnosed the patient having episode of anaphylaxis

a- . What type of Hypersensitivity reaction did the patient experience? 1

b- What are other types of hypersensitivity reactions? Give pathogenesis and one example of each. 4

Q-9 a- Draw life cycle of plasmodium. 2.5

b- Draw the eggs of:

1- Schistosoma mansoni 2.5

2- Schistosoma hematobium

3- Ascaris lumbricoides

4- Giardia lamblia

5- Taenia solium

General Rec

Q-10 a- Write down the mechanism of bacterial resistance of drugs. Give Examples. 2

b- what are different phases of bacterial growth curve. 1

c- Define the term bacteriostatic and bactericidal 2

Q-11 After recent flooding in a local area, there is large influx of patients with classical rice water stools.

a- Name the most likely etiological agent 1

b- Give pathogenesis and lab diagnosis of this 3

c- Write down 2 differences between endotoxin and exotoxin 1

Vibrio

Q-12 A new born child born in village by a grandmother develops strong muscular spasms, arching of back dies of respiratory failure after a week.

a- Name the most likely etiological agent 1

b- Name 3 other bacterial species of genus with diseases caused by these organisms. 3

c- Another new born developed meningitis and died next day. Name two organisms responsible for the disease. 1

C. Botulini

Q-13 A 40 years old diabetic female comes to the clinic with complains of itching in groin region along with burning micturition. She has also noticed white colored discharge from her vagina?

- a. What fungal infection can cause this disease? 1 *C. albican*
- b. What is the condition patient suffering from? 0.5
- c. What are the other presentations of infection with this fungus? 1.5 *Oral candidiasis, diabetes*
- d- Name fungal disorders common in immunocompromised patients 2 *HIV pt.*

Q-14 a) Describe pathogenesis and the clinical spectrum of infection by dengue virus?
2.5

- b) How will you confirm diagnosis in laboratory? *→ CBC, WBC, Platelet, ...*
↳ virus isolation, serologic test 1.5
- c- Name 2 oncogenic viruses with associated tumours. 1

Q-15 A 14 year old girl develops 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? 01

St. pyogenes.

(b) Enumerate the mechanism and prominent clinical features of two immunologic diseases caused by this organism. 04

[Signature]



Department of Pathology
Azra Naheed Medical College
Sent up 2018
MBBS 3rd Year (SEQ)

2018

Time Allowed: 2 hour

Total Marks: 75

Send-

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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. Draw and label the bacterial growth curve. 3
b. Name the mechanisms of transfer of bacterial genetic material? 2
2. A 54-year-old patient presents with a persistent cough, hemoptysis, and weight loss. A sputum sample is collected that has a positive acid-fast stain.
 - a. What is your diagnosis? 1
 - b. Give its pathogenesis. 4
3. 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? 1
 - b. What is its mode of transmission? 1
 - c. What is the pathogenesis of it? 3
4. A 3-year-old girl was brought to the emergency room by her parents because of fever and 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, and respiration 24/min. Blood pressure was 110/60mmhg. Blood was obtained for culture and other laboratory tests. Lumbar puncture was performed in less than 30 minutes after the patient arrived in the emergency room. The CSF aspirated was cloudy. Gram staining showed numerous polymorphonuclear cells 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:
 - o Neonates Agalactae
 - o children and Adults (1) meningitis, pneumonia
 - d. Enumerate two differences between gonococci and meningococci. (1)

regulared
have plasmid
have bacteriophage

5. A 40 years old man complaint of fever, vomiting, anorexia and deep yellow coloured urine. The blood examination revealed high levels of SGOT, SGPT & alkaline phosphatase, the direct bilirubin is also high.
- Name the viruses causing hepatitis (1)
 - How can you confirm the type viral infection by serologies (3)
 - Name the complications (1)
6. a. Define septic shock. (2)
b. Explain the patho-physiology of shock. (3)
7. a. Name the tapeworms. 2
b. Describe the life cycle, laboratory diagnosis of *Echionococcus granulosis*. 3
8. A 65 year s old women attends the hospital with breast lump for the last 6 months and pain in right hypochondrium for 10 days. She is diagnosed as carcinoma breast with metastasis to the liver.
- Give the flowchart of the steps involved in haematogenous spread of tumor (3)
 - Name the various types of carcinogenic agents. (2)
9. A 40 year old obese looking man who is a chain smoker, comes to the hospital with a history of chronic cough and weekness. On investigation, he is diagnosed to have carcinoma lung.
- What do you understand by paraneoplastic syndrome? Give its examples. (3)
 - Name the various laboratory diagnostic procedures for neoplasia. (2)
10. A 40 year old female gives birth to a child with flat facial profile, oblique palpebral fissure and epicanthic folds. He grew up to be a mentally retarded child.
- What is the expected underlying chromosomal abnormality in this child? (2)
 - Describe the mechanism of development of this genetic abnormality? (3)
11. A 50 year old woman had fracture of her femur. After 1 month, closed reduction was done. What are the factors which lead to non-healing of the fracture? (5)
12. Define and classify gangrene necrosis. Give description with examples of each type. (5)
13. A 25 year old male developed a red hot fluctuant swelling on the upper arm after receiving an intramuscular injection at that side. The cause of fluctuant swelling was local fluid exudate formation. Describe the mechanism of this exudates formation. (5)

14. A five year old girl is brought to the emergency with severe respiratory difficulty and wheeze, half an hour after intake of fish. There is history of similar episodes in the past.

- a. Name the type of hypersensitivity reaction involved. (1)
- b. Name two preformed and two newly synthesized mediators of mast cells and their actions. (4)

15. A 62 years age smoker have severe arthritis and on immunosuppressive therapy, lung biopsy shows septate hyphae that form v shaped branches, agar shows conidia with spores in radiating column

- a. What is the diagnosis (1)
- b. Mode of transmission (1)
- c. Pathogenesis (3)



Azra Naheed Medical College

Send up Examination, 7 August 2015

MBBS 3rd Year (2nd Entry)

(Pathology-Subjective Part)

Time Allowed: 2 hours

Total Marks: 75

Roll No: 13107

29/8/15

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. Explain Mantoux test under the following headings.
- a. Material (01)
 - b. Dose of Tuberculin (01)
 - c. Interpretation of the test (03)
- Q2. a. Classify family Enterobacteriaceae on the basis of lactose fermentation and motility. (2)
- b. Write down pathogenesis of pertussis. (3)
- Q3. Give an account of pathogenesis and laboratory diagnosis of cholera. (05)
- Q4. Classify Streptococci and write down the laboratory diagnosis of *Strep. Pneumoniae*. (05)
- Q5. a. Write the definitions of the following along with one example of each.
- Antigenic drift (1.5)
 - Genetic reassortment (1.5)
- b. Give laboratory diagnosis of influenza virus. (02)
- Q6. Briefly write about pathogenesis, pathology and clinical types of poliomyelitis. (2+2+1)
- Q7. Write down pathogenesis and pathogenicity of *Candida albicans*. (05)

- 26
- Q8. A 20 year old farmer developed periodic bouts of fever & rigors occurring every 48 hours. He was anaemic & had splenomegaly. His peripheral blood smear showed crescentic shaped structures.
- What is the most likely diagnosis and its complication? (02)
 - How will you diagnose this case in laboratory? (03)
- Q9. a. Define necrosis. Discuss its morphological types with examples. (03)
- Differentiate dystrophic and metastatic calcification. Give two examples of each. (02)
- Q10. Define septic shock & explain its pathophysiology. (05)
- Q11. a. Define autosomal dominant disorders along with examples. (03)
- Write note on trisomy 21. (02)
- Q12. a. A 20 years young lady received sharp cut injury and in emergency ward, the wound was closed & approximated with surgical sutures. Her wound healing will take place by which intension? (01)
- Describe morphological features of wound healing by primary union. (03)
 - What are the systemic & local factors affecting the wound healing. (01)
- Q13. a. Enlist sequence of events of acute inflammation in chronological order. (03)
- Write down the chemical mediators of inflammation. (02)
- Q14. a. Enlist any six causes of chronic granulomatous inflammation. (03)
- Enlist any four types of macrophages as a part of reticuloendothelial system with their sites. (02)
- Q15. a. Define Neoplasia. (01)
- Tabulate the differences between Benign and Malignant Neoplasm. (04)



THE SUPERIOR COLLEGE, LAHORE

3rd PROFESSIONAL MBBS
Annual EXAMINATION 2018
PATHOLOGY

(SEQ'S)

Roll No. F15020
Total Marks: 75

Time Allowed: 2 hours

Instructions

1. Attempt all questions.
2. All question carry equal marks.
3. The SEQ's part is to be submitted within 2 hours, Extra time will not be given.
4. Neat Hand Writing use of margin and marker for headlines will increase the presentation of your paper.
5. Do not write your name or disclose your identity in anyway.

Q-No: 1. A 45-year-old man is referred because of a recent diagnosis of hereditary hemochromatosis.

- a) Which pigment is accumulated in such a condition? 1
- b) Enlist any FOUR other intracellular accumulations with their associated diseases. 4

✓ **Q-No: 2.** A 12-year-old boy presents with a 24-hour history of severe abdominal pain, nausea, vomiting, and low-grade fever. The pain is initially periumbilical in location but has migrated to the right lower quadrant of the abdomen, with maximal tenderness elicited at a site one third between the crest of the ileum and the umbilicus (McBurney point).

- a) What is the type of inflammation? 1
- b) Enlist functions of all major complement proteins in inflammation. 4

✓ **Q-No: 3.** A 47-year-old man presents with pain in the mid portion of his chest. The pain is associated with eating and swallowing food. Endoscopic examination reveals an ulcerated area in the lower portion of his esophagus. Histological sections of tissue taken from this area reveal an ulceration of the esophageal mucosa that is filled with blood, fibrin, proliferating blood vessels, and proliferating fibroblasts.

- a) Which term would best define such tissue? 2
- b) Enlist any TWO major differences between Primary and secondary healing. 3

✓ **Q-No: 4.**

- a) Enlist any THREE Tumor suppressor genes with their associated Tumors. 3
- b) How does a p53 gene work? Briefly describe in your own words. 2

Q-No: 5. A 24-year-old woman who had previously been uneventfully transfused receives a blood transfusion during surgery and shortly thereafter develops itching, generalized urticaria, laryngeal edema, and dyspnea with wheezing respiration. She has a past history of recurrent upper respiratory tract infections and frequent episodes of diarrhea

- a) Laboratory studies are most likely to reveal decreased concentrations of which of the immunoglobulins? 1
- b) Enlist any FOUR classical examples of type II hypersensitivity reaction. 4

Q-No: 6. A 34-year-old male, arrives at a local health clinic, complaining that he has fever, and has lost over 10% of his body weight in the last month. He also has a cough that produced rusty colored sputum. The physician orders for x-ray chest, sputum examination, and a tuberculin test. He was living with a room mate positive for tuberculosis about 6 months ago.

- a) Based on the symptoms and the laboratory results, which infectious disease does the patient suffer? What is the agent? 2
- b) What is tuberculin skin test? 3

Q-No: 7.

- a) Give classification of medically important bacteria on the basis of their oxygen requirement giving two examples of each type. 3
- b) Name any four groups of medically important bacteria that cannot be seen in gram stain preparation and explain why? 2

Q-No: 8. 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? 1
- b) What is the most likely causative agent? 1
- c) Give pathogenic factor and its mechanism in causing the problem. 3

Q-No: 9. 24 years old male presents with fever and chills in ER. His peripheral blood film reveals crescent shape gametes. He was given treatment and discharged from ER. 4 days later he again presented in ER with altered consciousness and mental confusion.

- a) What is your diagnosis now? 1.5
- b) Name the causative organism? 1.5
- c) Give 2 important complications of the parasite. 2

Q-No: 10. Poliomyelitis being an acute and having serious effects on CNS. In spite of a very large campaign it is still not possible to eradicate the disease completely in Pakistan.

- a) What different types of polio vaccines so far have been used for the prevention and control of this disease? 2
- b) Compare the advantages and disadvantages of killed and live polio vaccines. 3

Q-No: 11. A 65 years old man is diagnosed with malignancy of liver. His occupational history revealed that he had been working with vinyl chloride in a plastic industry.

- a) What is the most likely malignancy? 1
- b) Name four occupational cancers with associated carcinogens. 2
- c) Name four oncogenic viruses. 2

Q-No: 12. Compare features of autosomal dominant with autosomal recessive disorders. 5

Q-No: 13. An 85 years old male admitted in emergency with paraplegia dies suddenly. On autopsy cause of death was declared as pulmonary embolism. Source of embolus was deep vein thrombus in the leg vein.

- a) What is the pathogenesis of thrombus formation in this patient? 3
- b) Briefly describe the fate of thrombus. 2

Q-No: 14. A patient with suspected brain abscess was admitted in neurosurgery ward. The abscess was drained and pus was sent for culture and sensitivity. The isolate on blood agar is beta haemolytic, gram positive cocci with positive catalase and coagulase test.

- a) What is the most likely organism? 1
- b) Name any four other typical disease produced by this organism. 2
- c) Enumerate any two cell wall component with their importance in pathogenesis. 2

Q-No: 15. A 15 year old pathan boy presented with history of fever, wt loss, multiple nodules over skin with dark discoloration of skin, on examination he had mild splenomegaly and his CBC revealed anemia and thrombocytopenia. 1

- a) What is your most likely diagnosis? 4
- b) How will you confirm your diagnosis?

Q.11 A 27 years old mother gave birth to her first child. The father is homozygous RhD positive and the mother is homozygous RhD negative. Her baby is born without any complications and she was not administered anti Rh IgG. 15 months later she gave birth to her 2nd child, who is anemic, slightly jaundiced and has an enlarged spleen and liver.

- a) Which type of hypersensitivity reaction describes this condition? 1 (1)
- b) Give the immunological basis of this condition in this patient. 2 (2)
- c) Give two other examples of this type of hypersensitivity. 1 (2)

Q.12- Write brief notes on:

- a) Tetanospasmin. (2)
- b) Cholera toxin. 1 (1.5)
- c) Window period. 1 (1.5)

Q.13- Tabulate the healing process of fracture of long bone: 3 (5)

Q.14- A six (6) years old boy was brought to a paediatrician by his mother. His presenting complaints are mental retardation and abnormal facial features. This child has abundant neck skin, epicanthic folds and flat facial profile and simian crease. On auscultation a heart murmur was located.

- a) What is the most likely diagnosis? Down (1)
- b) Give the incidence and different karyotypes of this genetic disorder. 2 (3)
- c) Give couple of complications of this genetic disorder. 1 (1)

Q.15- A 46 years old businessman was brought in the emergency room with severe chest pain of 01 hour duration radiating to his left arm. Clinical examination and laboratory investigation confirmed MYOCARDIAL INFARCTION.

- a) Name the type of necrosis and mention the sequence of events that have occurred in the cardiac muscle. 1 (2)
- b) Enumerate three patterns of nuclear changes seen in cell death. 1 (1)
- c) Give four differences between necrosis and cell death. 2 (2)

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25

50

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THE SUPERIOR COLLEGE, LAHORE

2nd PROFESSIONAL MBBS
ANNUAL EXAMINATION 2015

PATHOLOGY

(SCQ'S)

Roll No.

Time Allowed: 2 hour

Total Marks: 75

Instructions

- The SEQ's part is to be submitted within 2 hours, Extra time will not be given.
- Neat Hand Writing use of margin and marker for headlines will increase the presentation of your paper.
- Do not write your name or disclose your identity in anyway.

Q1. Briefly describe the role of different mediators involved in inflammation. (05)

Q2. a. Define the following with at least one example: (05)

- Hyperplasia
- Hypertrophy
- Metaplasia
- Atrophy
- Dysplasia

Q3. a. What factors can delay the wound healing? (02)

b. Give the name of growth factors which help in tissue repair and healing with at least one function.

epidermal growth factor, platelet derived growth factor, fibroblast growth factor, collagen, heparin, glycoprotein

Q4. a. Discuss the free radical mediated injury, giving examples of the anti-oxidants. (03)

b. Enumerate the differences between necrosis and apoptosis. (02)

Q4a intravenous solid, liquid, gaseous mass that can be found by blood to a site distant from a point of origin.

Q5. a. Define embolism & its different types. (03)

Q5a fat, Amniotic fluid, Air

b. Define infarction & its different types along with their morphology. (03)

Q5b ischemic necrosis caused by occlusion of vascular supply to affected tissue, the process by which such lesion

Q6. a. Compare the characteristics of benign & malignant neoplasm. (03)

b. Write short note on tumor marker. (02)

Q7. a. Define mutation & different types of mutations. (03)

b. Write a note on turners syndrome. (02)

Q8. a. How can we culture virus particles in the laboratory? Briefly explain various methods. (02)

b. What are reactions of viruses to various physical & chemical agents? (03)

Q9. Write pathogenesis of Coryne bacterium (diphtheria) in detail. (05)

25
1/2

Q10. Classify medically important fungi on the basis of growth phases.
Give an overview of laboratory diagnosis of fungal infections. (05)

Q11. a. Classify Gram negative rods on the basis of source of infection. (03)
b. Write down pathogenesis of legionnaire's disease. (02)

Q12. A young boy having a history of dining out, developed abdominal pain and dysentery. His stool sample showed blood and mucous in it.
a. What is the most likely causative agent and its complication. (03)
b. Draw and label the ova and trophozoite form of this parasite. (02)

Q13. Enumerate medically important species of Clostridium. Write down pathogenesis and clinical findings of Clostridium tetani infection. (05)
GABM

Q14. a. A 20 year old farmer developed periodic bouts of fever and rigors occurring every 48 hours. He was anaemic and had splenomegaly. His peripheral blood smear showed crescentic shaped structures inside the RBCs. Draw and label the life cycle of this parasite. (03)

b. Give the complications and laboratory diagnosis of Plasmodium vivax. (02)

Q15. Give account of pathogenesis & laboratory diagnosis of enteric fever. (05)

Jaunt



PATHOLOGY

MCQ'S

TIME: 2 HOURS

TOTAL MARKS

Instructions

- All SQ's are to be attempted on the paper and returned to the invigilator within 2 HOURS after you have received the question paper.
- 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.
- Write your Roll No. only on the perforated portion of the title page.
- Do not write your name or disclose your identity in anyway.

Attempt All Questions

- Define necrosis. List its morphological types with examples. (1+4)
- Give differences between benign and malignant tumours. (5)
- Define repair. Briefly describe various steps of healing in an infected lacerated wound with reference to the changes at different time periods. (1+4)
- What is the fate of acute inflammation after a tissue injury. Discuss different morphological patterns of acute inflammation. (2+3)
- Write a description on Downs syndrome along with its characteristic features. (5)
- Define thrombosis. Explain primary & secondary hemostasis along with functions of endothelium. (1+4)
- A 8-year-old boy was brought to medical emergency with wheeze, severe respiratory distress and low blood pressure after an injection of Benzyl penicillin. (1+4)
 - Name the type of hypersensitivity reaction involved.
 - Name preformed and newly synthesized mediators of mast cells and their action in tabulated form.
- Classify Streptococci. (5)
- Write interpretation of HBV serological markers in patients with hepatitis B. (5)
- Name medically important systemic mycoses. (2+3)
 - What do you know about the approaches to the laboratory diagnosis of fungal diseases.
- Write a descriptive note on Trichomonas vaginalis. (5)
- Define Sterilization. Name methods of Sterilization (1+4)
- Discuss pathogenesis of Mycobacterium tuberculosis. (5)

14. Write down the laboratory diagnosis of *Treponema pallidum*. (5)
15. a). Name features common to all members of Enterobacteriaceae family. (2+3)
- b). Name the Gram negative rods causing urinary tract infection.



THE SUPERIOR COLLEGE, LAHORE

2nd PROFESSIONAL MBBS

ANNUAL EXAMINATION 2016

Pathology

(SEQs)

Roll No. -----

Time Allowed: 2 hours

Total Marks: 75

Instructions

1. The SEQs part is to be submitted within 2 hours, extra time will not be given.
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Q.1- A 56 years old woman is diagnosed with an ovarian adenocarcinoma. Upon laparotomy the tumor was found to be unresectable. The peritoneal cavity contained excessive fluid. Cytological examination of peritoneal fluid revealed numerous malignant cells.

- gelatinous neoplastic mass called pseudomyxoma peritonei*
- a) What is the process by which tumor cells have reached peritoneal cavity? (1)
 - b) What are other means of spread of malignant tumors? (2)
 - c) Name any two tumor markers diagnostic of malignant tumors and associated cancers. (2)

Q.2- Define and classify Shock. Discuss pathological changes produced in different phases of Shock. (5)

Q.3- A 44 years old man presented with 3 months history of cough, fever & weight loss. Chest X-ray showed bilateral cavity disease. Sputum culture grew acid fast bacillus that is photochromogen.

- a) Name the possible etiological agent. *B. Anthracis* (1)
- b) What are the two principle lesions which this organism might have produced in the lungs of this patient? (2+2)

Q.4- A 31 years old man met a roadside accident. He had a compound fracture of his left leg. One day later he developed fever 39C, sweating and increased heart rate. The doctor found that his leg was swollen and crepitation was present. The doctor sent oozing fluid to the lab for examination. Brick shaped gram positive rods and spores were identified. The colonies on blood agar showed double zones of hemolysis.

- a) Name of probable pathogen? *Repeat* (1)
- b) Enumerate four (4) toxins produced by the pathogen. (2)
- c) Explain pathogenesis of this disease. (2)

Q.5- A 35 years old woman came to the emergency department with a history of frequency, urgency and burning micturition. She informed that her urine smells like ammonia. Urine C/E showed many pus cells and bacteria. In the lab it was found that this organism was gram negative bacillus and indole negative.

- a) Name the most probable pathogen. (1)
- b) What is clinical significance of UTI caused by this organism? (1)
- c) Give two points by which you can differentiate it from Klebsiella pneumonia in the laboratory. (2)
- d) Name two other diseases caused by this organism. (1)

Q.6-a) Hepatitis A virus belongs to which virus family? Give general properties of this family. (2.5)
b) Give laboratory diagnosis of HAV. (2.5)

Q.7- Enlist common parasites in children. Draw and label life cycle of Enterobius Vermicularis. (2+3=5)

Q.8- a) Name different morphological patterns of acute inflammation. (2)
b) What are outcomes of acute inflammation? (3)

Q.9- Write notes on:

a) Pathogenesis and pathology of Rabies virus. (2.5)
b) Antigenic shift. (2.5)

Q.10- Briefly explain the following.

a) Pathogenesis of Herpes simplex virus. (2)
b) Pathogenesis and complications of Polio virus. (3)

Q.11- Briefly explain the following.

a) Give a list of four (4) viruses which can be transmitted by sexual route. (2)
b) Lab diagnosis of C.albicans. (1.5)
c) Lab diagnosis of C.neoformans. (1.5)

Q.12- a) Define neoplasia. How do we classify neoplasia? (2.5)

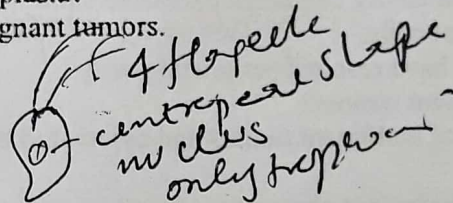
b) Enumerate differences between benign and malignant tumors. (2.5)

Q.13- Draw and label:

a) Cyst of Entamoeba histolytica.



b) Trichomonas vaginalis.



(2.5)

(2.5)

Q.14- Explain with the help of a diagram the life cycle of Plasmodium falciparum in man. (5)

Q.15- A 46 years old businessman was brought in the emergency room with severe chest pain of 01 hour duration radiating to his left arm. Clinical examination and laboratory investigation confirmed MYOCARDIAL INFARCTION.

a) Name the type of necrosis and mention the sequence of events that have occurred in the cardiac muscle. (2)

b) Enumerate three patterns of nuclear changes seen in cell death. (1)

c) Give four differences between necrosis and cell death. (2)



Time Allowed: 2 hours

Instructions

1. Attempt all questions.
2. All question carry equal marks.
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Q-No: 1. A 70 years old male was found to have stenosis of right renal artery which caused shrinkage of right kidney.

- a- Which process actually caused his kidney to shrink? *atrophy*
- b- What are other different adaptations which can happen, give types and examples *hypertrophy, metaplasia, dystrophy*

Q-No: 2. A 35 year's old female developed skin blister on her foot while spilling of hot oil while cooking.

- a- Name the morphological pattern of inflammation in this case. *serous* 1
- b- What are sequence of events during the process of inflammation? 3
- c- Name two types of granulomatous inflammation. *immune foreign body* 1

Q-No: 3. A 50 years old diabetic female had a deep cut on her hand. The wound fail to heal.

- a- What is the cause of delayed wound healing in this case. *microangiopathy* 1
- b- List 2 local and 2 systemic factors affecting wound healing. 2
- c- What is keloid? *excessive scar formation* 2

Q-No: 4. A 25 year old female gave birth to a baby by C- section.

- a- What kind of wound healing will occur in this case. *1st intention* 1
- b- what are the different types of wound healing *primary, secondary* 2
- c- what are the common organisms to cause infection in these patients. 2

Q-No: 5. A child is brought to a doctor and he notices that the baby has flat facies, epicanthal folds, Siamese crease, umbilical hernia, and hypotonia with increased gap between 1st and second toe

- a- What is the most likely diagnosis? *Down Syndrome, 21* 1
- b- Give its genetic make up *trisomy 21st* 2
- c- Write down 2 differences between autosomal dominant and autosomal Recessive disorders. *heterozygous onset, delayed symptoms, homozygous, Early onset*

Q-No: 6. A 5 years old child has seasonal allergies. He develops swelling and itching after a subcutaneous injection of pollen.

- a- What is the type of hypersensitivity reaction involved in this case? *1st* 1
- b- Draw a table and write down different types of hypersensitivity reactions with their immunomechanisms. 4

Q-No: 7. a. Define following terms

- I. Metaplasia
- II. Carcinoma In-situ *GIT*
- III. Hamartoma
- IV. Teratoma *cytoskeleton abnormality*

b. Name 2 paraneoplastic syndromes. *cushing syndrome, hyperkalemia*

c. Describe the role of p53 in tumour formation

Q-No: 8. A 40 years old female presented with lump in the breast with wide spread metastasis.

- a- Draw and label the mechanism of spread of tumour. *lymphatic, body cavity, blood*
- b- What are different modes of spread of tumours? *3*
- c- Name two malignant mesenchymal tumors.

Q-No: 9. A 60 years old diabetic patient was admitted to the hospital for the treatment of diabetic foot. His blood was cultured, which revealed Staphylococcus epidermidis showing high level of resistance to a wide range of antibiotics:

- a- In this situation, will this bacteria act as flora or pathogen? Explain. *pathogen (1.5)*
- b- Give the importance of lactobacillus as normal flora. *lactobacillus inhibitor (1.5)*
- c- write two mechanisms of antibiotic resistance. *decreased permeability (2)*

Q-No: 10. A 27 years old mother gave birth to her first child. The father is homozygous RhD positive and the mother is homozygous RhD negative. Her baby is born without any complications and she was not administered anti Rh IgG. 15 months later she gave birth to her 2nd child, who is anemic, slightly jaundiced and has an enlarged spleen and liver.

- a) Which type of hypersensitivity reaction describes this condition? *2 type*
- b) Give the immunological basis of this condition in this patient. *antibody produced against 2 child*
- c) Give two other example of this type of hypersensitivity. *neutropenia, blood transfusion reaction*

Q-No: 11. A 60 years old man presented with severe chest pain after doing a long jog. He is also diabetic. He is taken to emergency and thrombolytic therapy is given.

- a- What is a thrombus? Name different factors involved in its formation. *Virchow's triangle 0.5+1.5*
- b- What are different types of Embolism? *fat, air*

Q-No: 12. 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 are seen. The physician asks for a stool sample to complete the diagnosis. *Salmonella*

- a) Which organism is most likely to be identified in her stool to cause the disease? *1 2*
- b) What is the pathogenesis of the disease? *2*
- c) Discuss the laboratory diagnosis. *2*

Q-No: 13. A 45 years old lady presented with abnormal uterine bleeding. Ultrasonography reveals an adenocarcinoma

a- Write down differences between benign and malignant neoplasm by which this tumour can be categorized. *malignant*

b- Name 2 benign epithelial tumours and 2 malignant mesenchymal tumours. *2*

Q-No: 14. 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 crescentic structures.

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

Q-No: 15. Define mutation.

- a) What are different types of mutations? *point, frame shift, transition, transversion*
- b) Name three chromosomal disorders with associated genetic mutations. *Down, Klinefelter, Turner*