



ALL QUESTIONS ARE TO BE ANSWERED:

IMMUNOLOGY (90 marks)

- Q1) Give an account on: (20 marks each)**
- Conditions caused by delayed hypersensitivity reactions
 - Uses of monoclonal antibodies
- Q2) As regard autoimmune disorders mention the followings: (6 marks each)**
- Mechanism of tissue damage
 - Laboratory diagnosis
- Q3) Give A definition for: (6 marks each)**
- Opsonization
 - DiGoerge's Syndrome
 - Paratope
 - Arthus reaction
 - Oncofetal antigen
- Q4) Discuss the immune response to tumors antigen (8 marks)**

SYSTEMIC BACTERIOLOGY (135 marks)

Q5) Case study (30 marks) (6 marks each)

A 48-year-old man presents for the evaluation of a 2-month history of upper abdominal pain associated with nausea. It is made worse when he drinks soda. He has taken multiple over-the-counter antacid medications that provide temporary relief. He admits to a 20-pack-year smoking history. His abdominal examination is notable for epigastric tenderness without the presence of masses. A rectal examination reveals his stool to be heme positive. CBC shows a mild hypochromic, microcytic anemia. The upper GI endoscopy shows diffuse gastritis and a gastric ulcer.

- What organism is most likely to be visualized on histologic evaluation of a gastric biopsy specimen?
- Mention the clinical test that provides a rapid detection of this organism and how to be done?
- What are the mechanisms of pathogenicity of this organism?
- What is the recommended treatment regimen?
- Mention one laboratory test confirms the diagnosis and the effectiveness of therapy.

Q6) Give a short account on each of the following (5 marks each)

- Enterohemorrhagic strains of *E.coli*.
- Bacillus cereus* food poisoning.
- Strept.agalactia*.

Q7) For each of the following items just enumerate: (5 marks each)

- The diagnostic tests of syphilis.
- Bacterial causes of atypical pneumonia.
- Bacterial causes of non-gonococcal urethritis.
- The new rapid techniques for detection of Mycobacteria in clinical samples.



Q8) Mode of transmission and lab diagnosis for each of the following medical conditions (10 marks each)

- Actinomycosis
- Q fever
- Legionnaires' disease

Q9) Explain briefly each of the following (5 marks each)

- The mechanism of *Listeria monocytogens* invasion and intracellular growth.
- The role of *V. cholera* toxin in pathogenesis of cholera.
- Pseudomonas aeruginosa* is a frequent causative organism in hospital associated infections.
- The structure of *Yersenia pestis* plays a vital role against host defense.

Q10) Compare between each of the following (10 marks each)

- HA-MRSA & CA-MRSA
- Tuberculoid leprosy & lepromatous leprosy

VIROLOGY (110 marks)

Q11) Answer the following: (11 marks each)

- Enumerate the different effects for biologic contamination in tissue culture
- Describe principle for shell vial assay and its significance
- In a table form enumerate different agents used for viral chemoprophylaxis
- Give short account on conditional lethal mutation and its application

Q12) Answer the following: (11 marks each)

- Mention different antigens of Epstein Barr virus (EBV)
- In a table form , compare between different serologic markers of HBV in different stages of infection
- Give short account on viral vector vaccine for COVID-19
- Compare between specific diseases caused by group A and B Coxsackie virus

Q13) Answer the following: (11 marks each)

- Describe Norwalk virus (Norovirus) regarding disease caused by it and transmission
- Mention laboratory diagnosis of respiratory syncytial viral infection (RSV).

MYCOLOGY (25 marks)

Q14) Discuss different mechanisms of action of antifungal drugs. (10 marks)

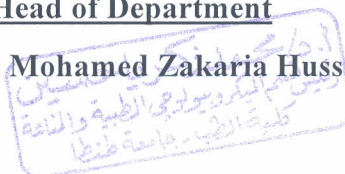
Q15) Regarding Cryptococcosis discuss the following: (15 marks)

- Causative agent and its morphology. (3 marks)
- Pathogenesis and clinical manifestations. (6 marks)
- Laboratory diagnosis and specific treatment (6 marks)

Good Luck

Head of Department

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Microbiology & Immunology Department

Master of Bacteriology (first paper)

Date 20/4/2022

Time allowed: 3Hours

-Answer the following questions:

1- Give a short account on each of the following :

- a) Bacteria with defective cell wall (5 Marks)
- b) Bacterial growth curve and mention the clinical significance of each stage (10 marks)
- c) Applications of DNA recombinant techniques (5 Marks)
- d) Bacterial Transformation (5 Marks)
- e) Mechanism of antimicrobial drug resistance (5 Marks)
- f) Radiation Methods of sterilization (5 Marks)
- g) Bacterial pigments (5 marks)

2- Explain each of the following:

- a) Definition and steps of hybridization (7marks)
- b) Taqman probes (5marks)
- c) Nested PCR (5 marks)

3- Outline each of the following:

- a) Airborne Isolation Precautions (5 marks)
- b) Spaulding classification of equipments (5 marks)
- c) Antimicrobial Stewardship : Definition and Objectives (6 marks)
- d) Schedules of vaccines to healthcare workers (6 marks)
- e) Types of hand hygiene (6 marks)
- f) Personal protective equipments (5 marks)
- g) Classification of the Chemical indicators of the autoclave (5marks)

4- Discuss briefly each of the following:

- a) Heterophil Antigen (5 marks)
- b) Definition and Stages of Phagocytosis (5 marks)
- c) Differences and similarities between MHC class I and II (5marks)
- d) Opsonization (5 marks)
- e) MHC restriction (5 Marks)
- f) Superantigen (5marks)
- g) Natural Killer cells (5 marks)
- h) T-helper Lymphocytes ; Functions and subtypes (10 marks)

5-Tabulate the differences between the following :

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|---|-------------|
| a) Bacterial Exotoxins and Endotoxins | (10 marks) |
| b) Generalized and specialized Transduction | (10 marks) |
| c) Transposons and Plasmids | (10 marks) |
| d) Genetic and Non- Genetic origin of drug resistance | (10 marks) |

يُعقد الامتحان الشفوي يوم الاثنين الموافق 2022-5-9 بقسم الميكروبيولوجي الساعة العاشرة صباحا.

Good Luck

