



All Questions to Be Attempted

- برجاء قراءة جميع الأسئلة جيدا والالتزام بالتعليمات الخاصة بالإجابة والزمن المحدد لكل سؤال
- هذا الامتحان يشتمل على ٦ أنماط من الأسئلة ٩ صفحات مختلفة
- على كل طالب التأكد من عدد أوراق الأسئلة في النصف ساعة الأولى من الامتحان
- إجابة الأسئلة (I, III) في ورقة الإجابة المخصصة "Answer Sheet" و باقي الاسئلة في المساحة المتروكة
- الامتحان الشفوي غدا إن شاء الله من الساعة ١١ص حتي الساعة ١ ظ ، مع تمنياتنا للجميع بالتوفيق

Question I: (Estimated time for answer 45 minutes)

40 Marks, 1 mark/choice

Read all choices carefully and choose **THE BEST** correct answer (Mark your final decision in the answer sheet):

- 1) The primary action of heat is to
a) dry, destroy cell wall
b) moist, kill vegetative bacteria
c) dry, dissolve lipids
d) moist, denature proteins
- 2) Which one of the following diseases is typically transmitted by infected fleas?
a) Cholera b) Legionnaire's Disease c) Plague d) Rocky Mountain spotted fever
- 3) Amphotericin B is
a) Fungicidal b) fungistatic c) bacteriostatic d) bactericidal
- 4) Augmentin is an example for.....
a) Macrolides b) Cephalosporin c) Carbapenems d) Oxacephem s e) Clavams
- 5) The most important complication of gonorrhoea in women is.....
a) arthritis b) pneumonia c) pelvic inflammatory disease d) blindness
- 6) All of the following are pathogen primarily within enteric tract except.....
a) Brucella b) Shigella c) *Vibrio cholera* d) *Helicobacter*
- 7)are involved in allergic reactions and killing of larger parasites.
a) Basophils b) Eosinophils c) Neutrophils d) Monocyte
- 8) Dermatophytosis means.....
a) cutaneous mycoses b) Subcutaneous mycoses c) systemic mycoses d) a & b
- 9) Epstein-Barr virus binds to receptor on B cells.
a) CD3 b) CD8 c) CD21 d) CD19

.....
3. What is the most suitable treatment for this case?

.....
2. Mention two characteristic features for this organism?

.....
1. Name that organism?

Samples taken from the blisters showed white blood cells and gram-positive cocci in chains. 12 years old boy came to the hospital complaining from papular (bumpy) leg rash. He tried low potency steroid cream (1% hydrocortisone) but the rash got worse, now almost whole leg. Case 7: (3 MARK)

.....
3. What does DPT stand for?

.....
2. What is the most suitable treatment for this case?

.....
1. Name that organism and mention another characteristic biochemical test? 2 year old infant came to emergency room with severe rash that peels off. His mother said that his vaccinations are up-to-date, including DPT. Scratching from the lesions showed clusters of gram-positive cocci; beta-hemolytic; catalase-positive colonies on sheep blood agar. Case 6: (3 MARK)

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4. Is this disease a curable disease? Why?

.....
3. How this disease is usually transmitted?

.....
2. Which organism is he infected with?

.....
1. What is your provisional diagnosis? 15-year old boy comes to your practice with his mother. He had been fine until about five days ago when he developed a fever. He has a stiff neck and rash on his back and arm (as rings in the form of a bull's eye). His mother reports that he was playing in the woods with some friends recently. Case 5: (2 MARK)

.....
Write another 2 organisms that can cause this disease & their characteristic feature?

.....
What is the most possible organism?

Question V (Clinical cases): (Estimated time for answer 40 minutes) 20 Marks

Case 1: (3 MARK)

67 years old non-insulin-dependent diabetes mellitus man came to the hospital with wheezing, productive cough; rapid pulse and fever. Gram stain showed gram-positive cocci in pairs; alpha-hemolytic; sensitive to Optochin.

1. What is your provisional diagnosis?
.....
2. What is the most possible organism and its characteristic features?
.....
3. What is the most suitable treatment for this case?
.....

Case 2: (3 MARK)

22 years old female complaining from fever, nausea, vomiting, diarrhea; elevated pulse, and lowered blood pressure. She has an enlarged spleen and a generally tender abdomen with red macules. Gram stain showed gram-negative rods that grew on MacConkey agar as colorless colonies (lactose negative). On triple sugar iron (TSI) agar; they produce small ring of H₂S at the top of the slant.

1. Identify this organism?
.....
2. What is your provisional diagnosis?
.....
3. To confirm the diagnosis, you should perform.....
4. What is the most suitable treatment for this case?
.....

Case 3: (3 MARK)

11 years old girl with lymphoma has developed fever and pneumonia. Gram stain showed gram-negative rods that have blue green pigment when cultures on ordinary nutrient agar.

1. What is the most possible organism?
.....
2. What are other tests to confirm your diagnosis? (MENTION 2)
.....
.....

Case 4: (3 MARK)

13 years old female had urinary tract infection. Urine sample revealed gram-positive non-encapsulated cocci; arranged in clusters; coagulase negative.

QUESTION IV: (Estimated time for answer 20 minutes) 10 Marks, 0.5 mark/space

- 1) and are examples of localized autoimmune diseases, mediated by direct cellular damage.
- 2) The presence of.....antibody indicates secondary immune response, while..... antibody is secreted during primary immune response.
- 3) An alcoholic presents with a fever, pleuritic chest pain, dysnea and cyanosis. His cough produces a bloody “current jelly” sputum. CXR shows inflammation involving the right upper lobe with possible cavitation The causative organism is.....
- 4) A woman returns to the doctor because of an annoying and persistent urinary tract infection. The woman’s complaint of dysurea motivates more diagnostic tests, revealing the presence of a large radiopaque stones in the urinary tract. The woman also provides several urine samples, which show swarming on blood agar. The causative organism is.....
- 5) CD8+ T cells recognize antigens bound to, while CD4+ T cells recognize antigens bound to
- 6) If there is high fever and a rapidly spreading cellulitis with crepitus and a foul-smelling odor in the area of fracture and large gram-positive rods are seen on the exudate, the most likely organism to be the cause is
- 7) Zoonotic viruses means
- 8)is autoimmune disease mediated by blocking antibodies while is mediated by stimulating antibodies.
- 9) Zika virus is transmitted by and causes in adults.
- 10) Cytotoxic T cell secretes a protein called, which makes in the cell membrane, causing the cell to lyse and die.
- 11) Diseases caused by arboviruses include..... ..and
- 12) Injection of anti-venom to patient for snake bite is an example of while vaccines are example of.....

Question III: (Estimated time for answer 25 minutes)

10 Marks

Mark whether the following statements are true (T) or false (F) "Mark your final decision in the answer sheet":

- F - T 1) *Staph. saprophyticus* are catalase-positive, coagulase-positive cocci in clusters.
- F - T 2) *Chlamydia trachomatis* is non-motile, gram-negative, intracellular bacterium.
- F - T 3) Type II Hypersensitivity is IgE-mediated.
- F - T 4) In hyper-acute transplantation rejection, transplant must be immediately removed
- F - T 5) Passive immunity is typically short-lived.
- F - T 6) Anaphylactic reaction is an example of Type I Hypersensitivity.
- F - T 7) Cefaroline is an example of fifth generation of cephalosporin.
- F - T 8) Nausea, vomiting, stomach cramps due to eating of rice found in a dumpster is caused by *Bacillus cereus*.
- F - T 9) Secondary immune response (IR) is slower and stronger than the primary IR.
- F - T 10) Dendritic cells are the most potent Ag presenting cells (APCs).
- F - T 11) T-cells have glycoprotein on their surface called cluster of differentiation (CD).
- F - T 12) Antibodies defend the body primarily against bacteria, bacterial toxins, and viruses present intracellularly in body fluids.
- F - T 13) Vaccines can be made by inactivation of harmful toxin.
- F - T 14) Tolerance is the inability to distinguish between self and non self.
- F - T 15) Type IV hypersensitivity is mediated by T-cells.
- F - T 16) Transplant of skin grafts to the same person is a type of isograft.
- F - T 17) Acute glomerulonephritis is more frequent after pharyngitis.
- F - T 18) Smoky urine is a characteristic of rheumatic fever.
- F - T 19) H antigen, composed of repeating oligosaccharides consisting of 3 or 4 sugars repeated 15 or 20 times, is the basis for serologic typing of many enteric rods.
- F - T 20) When the O antigen polysaccharides are lost from the endotoxin of the *brucella sp.*, the organism loses its virulence.

Question VI: (Estimated time for answer 20 minutes)

15 Marks

1) Compare between the hepatitis viruses regarding the followings: (5 marks)

Virus	A	B	C	D	E
Source					
Transmission					
Chronicity					
Carcinogenesis					
Prevention					

2) List the clinical manifestations of congenital CMV? (2 marks)

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3) Mention the major mechanisms of action of antibiotics with examples? (8 marks)

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GOOD LUCK



- 35) Growth rate of bacteria exactly equal to death rate during..... while cell population increases exponentially with time during.....
 a) stationary phase, lag phase b) log phase, stationary phase c) lag phase, stationary phase
 d) stationary phase, log phase e) log phase, lag phase
- 36) *Vibrio cholera* are..... and show..... on MacConkey's agar.
 a) oxidase-positive, colorless colonies b) oxidase-positive, colored colonies
 c) oxidase-negative, colorless colonies d) oxidase-negative, colored colonies
- 37) Pneumonia caused by *Klebsiella* is associated with
 a) Rusty sputum b) thick colourless sputum c) "currant-jelly" sputum d) non is true
- 38) *S.saprophyticus* is treated with.....
 a) aminoglycosides b) vancomycin c) quinolones d) daptomycin e) linezolid
- 39) Proper sewage disposal and chlorination of water are used for prevention of
 a) lyme disease b) shigellosis c) Salmonellosis d) a & b e) b & c
- 40) Stem cell graft is type of.....
 a) allograft b) homograft c) xenograft d) heterograft e) autograft

Question II: Match (Estimated time for answer 15 minutes)

5 Marks

No.	Organism	No.	Main complaint & features
1.	<i>Clostridium botulinum</i>	a.	Gram-positive, spore-forming rod that is responsible for antibiotic-associated pseudo-membranous colitis
2.	<i>Vibrio cholerae</i>	b.	Gram-negative diplococci cause ophthalmia neonatorum and pelvic inflammatory disease.
3.	<i>Chlamydia trachomatis</i>	c.	gram-positive rod; palisades arrangement, forms adherent, gray "pseudomembrane" in the throat
4.	<i>Clostridium difficile</i>	d.	Gram-negative, motile bacteria that can cause vomiting, severe diarrhea "rice water stools"
5.	<i>Bordetella pertussis</i>	e.	Gram negative, intracellular bacteria that cause pain in groin & swollen lymph nodes.
6.	<i>Haemophilus influenzae type b</i>	f.	Dizziness, confusion, double vision; difficulty in swallowing after eating canned food. No bacteria were isolated from stool samples
7.	<i>Neisseria gonorrhoeae</i>	g.	Gram-positive, spore-forming rods produce toxin in contaminated wound causing uncontrolled muscle contractions, respiratory failure
8.	<i>Corynebacterium diphtheriae</i>	h.	gram-negative coccobacilli; can causes runny nose, cold, high temperature, rapid pulse, then stiff neck & seizure
9.	<i>Clostridium tetani</i>	i.	slightly curved gram-negative rods; positive for urease causes gastric ulcers; heartburn and gastritis
10.	<i>Helicobacter pylori</i>	j.	gram-negative coccobacilli cause whooping cough.

1→ , 2→ , 3→ , 4→ , 5→ , 6→ , 7→ , 8→ , 9→ , 10→

- 23) Herpangina is caused by....., while Pleurodynia is caused by.....
 a) Rhinoviruses, Coxsackie B b) Coxsackie A, Coxsackie B c) Coxsackie B, Coxsackie A
 d) Coxsackie type A, Smallpox (variola) e) Enterovirus, Hepatovirus
- 24) Resistance of *Staphylococcus aureus* to the drug is caused by.....
 a) action of acetyltransferase b) *S. aureus* is an intracellular pathogen
 c) The action of β -lactamase d) Decreased permeability of bacterial cell wall to the drug.
- 25) A group of six children younger than 8 years of age live in a semitropical country. Each of the children has several crusted weeping skin lesions of impetigo (pyoderma). The lesions are predominantly on the arms and faces. Which of the following microorganisms is a likely cause of the lesions?
 a) *E. coli* b) *Chlamydia trachomatis* c) *S aureus* d) *Strept. Pneumonia* e) *Bacillus anthracis*
- 26) Transplantation rejection is more common with
 a) Allograft b) Isograft c) Xenograft d) a & b e) a & c
- 27) Ingestion of contaminated unpasteurized milk might cause an infection with.....
 a) Brucella, b) *M. tuberculosis* c) *H.pylori* d) a & b e) a & c
- 28) Sterilization is a term used to describe.....
 a) killing the vegetative forms of bacteria b) reduction of microbial number to safe level
 c) destruction of all forms of organisms d) swabbing of skin before injection
- 29) *Pseudomonas aerogenosa* can cause (choose 2 answers)
 a) Pneumonia b) Peritonitis c) Urinary tract infection d) Enterocolitis e) meningitis
- 30) Which of the following may result in Hemolytic Uremic Syndrome?
 a) enterotoxigenic *E. coli* (ETEC) b) enterohemorrhagic *E. coli* (EHEC)
 c) enteropathogenic *E-coli* (EPEC) d) enteroinvasive *E-coli*
- 31) is any process that destroy non-spore forming contaminant on inanimate object.
 a) Disinfection b) Sterilization c) Antisepsis d) Degermination
- 32) are naturally occurring penicillins.
 a) penicillin G b) penicillin V c) Fluxacillin d) a & b e) b & c
- 33) Which of the following organism is associated with outbreaks of diarrhea following ingestion of undercooked hamburger at fast-food restaurants?
 a) Enteropathogenic *E.coli* b) Enterotoxogenic *E.coli* c) brucella
 d) Enterohemorrhagic *E.coli* e) *Salmonella typhi*
- 34) Humoral immune response is characterized by.....
 a) diversity b) non-specificity c) self/non self-recognition d) a & b e) a & c

- 10) The drug of choice for treatment of staphylococcal infections especially MRSA is:
 a) penicillin G b) cephalexin c) vancomycin d) tetracycline
- 11) Acyclovir and lamivudine are examples for.....
 a) Reverse Transcriptase Inhibitors b) Protease Inhibitors
 c) Nucleoside and Nucleotide Analogs d) Gyrase inhibitors
- 12) Streptococcal Toxic Shock Syndrome and Scarlet Fever are caused by.....
 a) Streptokinase (Fibrinolysin). b) Deoxyribonucleases.
 c) Hyaluronidase. d) Pyrogenic Exotoxins (Erythrotoxic Toxin)
- 13) In Hashimoto's thyroiditis, patient produces against thyroid antigens.
 a) auto-antibodies b) sensitized TH1 cells c) CTLs d) a & b e) b & c
- 14) Which one of the following diseases is transmitted by infected ticks?
 a) Cholera b) Legionnaire's Disease c) Plague d) Rocky Mountain spotted fever
- 15) Which one of the following toxins causes scaled skin syndrome?
 a) alphatoxin b) TSST c) exfoliatin d) leukocidin e) pyrogenic
- 16) is the drug of choice in treatment of oral thrush and intestinal candidiasis.
 a) Nystatin b) penicillin c) tetracyclin d) aminoglycosides
- 17) Which one of the following drugs is used in treatment of urinary tract infection as it is highly concentrated in urine?
 a) temafloxacin b) norfloxacin c) clarithromycin d) azithromycin
- 18) All of the following are correct for interferon EXCEPT.....
 a) low molecular weight protein b) produced rapidly than antibodies
 c) have direct antiviral activity d) produced by virus infected cells
- 19) The primary target of HIV is
 a) activated CD8+ T-cells b) activated CD4+ T-lymphocyte c) activated B- lymphocyte
 d) non-activated lymphocyte e) dendritic cells
- 20) Respiratory syncytial virus belongs to the genus.....while Measles virus belongs to
 a) Paramyxovirus, Morbillivirus b) Pneumovirus, Rubula-virus c) Morbillivirus, Pneumovirus
 d) Morbillivirus, Enterovirus e) Pneumovirus, Morbillivirus
- 21) The source of energy of lithotrophs is..... while for photoheterotroph is
 a) organic materials, light b) light, inorganic sources c) inorganic sources, light
 d) light, organic materials e) organic materials , inorganic sources
- 22) In infectious mononucleosis, blood smears show.....
 a) typical lymphocytes b) syncytia c) Downey cells d) Negri bodies