Material from a patient with suspicion on colienteritis was inoculated on Endo’s medium. What color do colonies of Escherichia coli have?

1. blue
2. colorless
3. red with metallic hue
4. brown
5. green

ANSWER: C

Material from a patient with suspicion on typhoid fever was inoculated on Endo’s medium. What color do colony of lactosonegative Salmonella typhi have?

1. dark blue
2. colorless
3. red with metallic hue
4. brown
5. green

ANSWER: B

Material from a patient with suspicion on dysentery was inoculated on Endo’s medium. What color do colony of lactosonegative Shigella have?

1. dark blue
2. green
3. red with metallic hue
4. brown
5. colorless

ANSWER: E

Material from a patient with suspicion on an intestinal infection was inoculated on the Ploskirev’s medium. What color do colonies of Escherichia coli have?

1. dark blue
2. colorless
3. rose
4. brown
5. green

ANSWER: C

Material from a patient with suspicion on shigellosis (dysentery) was inoculated on the Ploskirev’s medium. What color do colonies of lactose-negative Shigella have?

1. dark blue
2. green
3. red with metallic hue
4. brown
5. colorless

ANSWER: E

Because of ill-timed treatment of pulpitis lower jaw osteomyelitis has developed in patient. What examination is it necessary to carry out for identification of causative agents and to choose effective preparation for treatment?

1. Complex serological examination
2. To examine the presence of proper antibodies
3. Microscopic examination of the pus
4. To examine bacterial antigens
5. To isolate bacterial pure culture and examine its susceptibility to antibiotics

ANSWER: E

Genetic identification is examination of bacterial species according to:

1. allergic tests
2. biotests in animals
3. polymerase chain reaction
4. phage typing
5. examination of bacterial susceptibility to antibiotics

ANSWER: C

From patient’s blood the culture Salmonella typhi was isolated. What cultural properties characterize this microbe?

1. Formation of colorless colonies on Endo’s and Ploskirev’s nutrient media
2. Formation of red colonies with metallic hue on Endo’s medium
3. Formation of colorless colonies on Bismuth-sulfite agar
4. Formation of haemolysis on a blood agar
5. Formation of tender pellicle on alkaline peptone water

ANSWER: A

What laboratory animals are very susceptible to Streptococcus pneumoniae?

1. White rats
2. Guinean pigs
3. Rabbits
4. Syrian hamsters
5. White mice

ANSWER: E

What laboratory animals are very susceptible to Mycobacterium tuberculosis?

1. White rats
2. Guinean pigs
3. Rabbits
4. Syrian hamsters
5. White mice

ANSWER: B

For diagnosis of what diseases biological identification is most important?

1. Tuberculosis
2. Botulism
3. Tetanus
4. Salmonellosis
5. All answers are correct

ANSWER: E

Laboratory assistant isolated from spinal fluid samples *Neisseria meningitidis* (oval cocci arranged in pairs with adjacent sides concave in the smear). Which morphological group do these microorganisms belong to?

1. micrococci;
2. streptococci;
3. staphylococci;
4. tetracocci;
5. diplococci

ANSWER: E

A 19-year-old male presents with dribble and painful urination (strangury), purulent discharge from urethra and subfebrile temperature. Two days ago he had sexual intercourse with his girlfriend without condom. Venereologist took discharge for microscopy. Which microscopic picture from following confirms diagnosis “gonorrhea”?

* 1. Gram-negative rods and leucocytes in the smear
	2. Gram-positive cocci located within leucocytes and outside
	3. Gram-negative bean-shaped diplococci located free and within leucocytes
	4. Spiral gram-negative bacteria
	5. Gram-negative ovoid small rod located into epithelial cells

ANSWER: C

Which nutrient medium is the most convenient to isolate pure culture *Neisseria meningitidis* from the clinical sample?

1. Meat-peptone agar
2. McConcy agar
3. Hiss media
4. Meat-peptone broth
5. Serum agar

ANSWER: E

Diphtheria toxin has a special affinity for which of the following tissue/s?

1. Heart muscles.
2. Nerve endings.
3. Adrenal glands.
4. All of the above.
5. none of the above.

ANSWER: D

Tuberculosis is spread by

1. contaminated fomites
2. food
3. respiratory droplets
4. vectors
5. urine

ANSWER: C

Patient N., 26 years old, had infection, caused by Herpes simplex virus type 1. Show the site where this virus can survive:

1. vagus nerve
2. B lymphocyte
3. epidermal cell
4. eighth cranial nerve
5. trigeminal nerve

ANSWER: E

Young woman, 32 years old complains of genital infection. Which of the following viruses cause genital infection?

1. Molluscum contagiosum.
2. Human papillomavirus type 6.
3. Herpes simplex virus type 2.
4. adenovirus serotype 37
5. all the answers are correct

ANSWER: E

Pregnant woman P., 2 months of pregnancy had rubella. Which of the following viruses can cause prenatal infection?

1. Rubella.
2. Cytomegalovirus.
3. Varicella-zoster.
4. All of the above.
5. none all of the above

ANSWER: D

Person H., 41 years old, is HIV carrier and has symptoms of Kaposi's sarcoma. Which of the following has been linked to Kaposi's sarcoma?

1. Human herpes virus 8
2. Epstein-Barr virus
3. Human T-cell lymphotropic virus
4. Human immunodefficiency virus
5. Human papilloma virus

ANSWER: A

A student S. studies groups of viruses, which are transmitted by insects. Exclude viral genus which is not transmitted by insects?

1. *Alphavirus.*
2. *Rubivirus.*
3. *Bunyavirus.*
4. *Togavirus*
5. All the answers are correct

ANSWER: B

Scientist examines the natural hosts of Japanese encephalitis viruses. Which of the following is reservoir of Japanese encephalitis virus?

1. Cats and dogs.
2. Cows and goats.
3. Pigs and man.
4. Water birds and pigs.
5. Water birds and man.

ANSWER: D

There was epidemic of West Nile encephalitis in US a few years ago. Show the vector for West Nile virus?

1. mosquito
2. flea
3. fly
4. louse
5. tick

ANSWER: A

It is necessary to make active prophylaxis of tick-borne encephalitis in group of students which are going to Siberian taiga. For specific prophylaxis of a tick-borne encephalitis is used:

1. immunoglobulin
2. toxoid
3. specific hyperimmune serum
4. formolated vaccine
5. live vaccine.

ANSWER: D

Student examines slides with different viruses. Indicate the shape of Rabies virus?

1. Spherical.
2. Polygonal.
3. Tubular.
4. Bullet-shaped.
5. Stick-like

ANSWER: D

It is necessary to make antemortem laboratory diagnosis of rabies. Where does virologist can detect rabies antigen by direct immunofluorescence?

1. hippocampal neuron
2. blood
3. hairs
4. corneal scrapings.
5. brain

ANSWER: D

The virologist examines biological properties of Adenovirus. Indicate correct statement about it.

1. has a neuraminidase
2. has a hemagglutinin
3. has a double shelled capsid
4. has an RNA genome
5. has an envelope

ANSWER: B

Patient G. has adenoviral conjunctivitis. How can virologist detect serotype of adenovirus?

1. By monitoring the response of the infection to steroid therapy.
2. By detecting the presence of viral double stranded DNA.
3. By using electron microscopy to detect viral particles in an eye swab.
4. By using serotype antibody for hemagglutination inhibition test
5. By detecting nuclear inclusions in infected cells collected in an eye swab.

ANSWER: D

Child F., 6 years old has tonsillitis, fever, weakness. Choose among following diseases nosologic form of disease, which may be associated with Epstein-Barr virus:

1. Infectious mononucleosis
2. Acquired immunodeficiency syndrome
3. T-cell leukemia
4. Herpes zoster
5. All the answers are correct

ANSWER: A

It is necessary to make virologic diagnosis of herpes zoster infection. What specimen should be collected from a patient for detection of this virus?

1. blood
2. saliva.
3. vesicle fluid.
4. spinal fluid.
5. swab from ulcer.

ANSWER: C

Patient M. has gingivostomatitis. Show virus which can does cause this disease.

1. cytomegalovirus
2. polyovirus
3. measles virus
4. herpes simplex virus 1
5. mumps virus

ANSWER: D

Woman F. suffers of genital herpes. Which virus can cause genital herpes?

1. Herpes simplex virus-1
2. Herpes simplex virus-2
3. Cytomegalovirus
4. Human herpes virus 6
5. Human herpes virus 8

ANSWER: B

Virologist makes laboratory diagnosis of infectious mononucleousis. Which of the following viruses can stimulate production of the heterophile antibodies?

1. HSV-1
2. HHV-7
3. EBV
4. CMV
5. varicella zoster virus

ANSWER: C

A doctor tries to precribe special medicine for treatment of herpes simplex infections. Which antiviral agent is commonly used to combat herpes simplex virus infections?

1. azidothymidine
2. foscarnet
3. idoxuridine
4. acyclovir
5. γ interferon

ANSWER: D

Student has to describe some diseases caused by Cytomegalovirus and its poroperties. All are true among listed postulates, except:

1. Is teratogenic
2. Primary infection is usually symptomatic
3. An infectious mononucleosis-like syndrome may occur during primary infection.
4. May cause severe infection in immunocompromised individuals
5. Giant cells are formed

ANSWER: A

Rubella infection may be spread among pregnant women. Choose erroneous statement about this disease:

1. Can be asymptomatic
2. May be indistinguishable from parvovirus B19
3. Is usually preventable by vaccination
4. Can have serious side effects when occurring in a woman in the third trimester of pregnancy
5. May be acquired by having close contact with an infant with congenital rubella syndrome

ANSWER: D

A 47-year-old man had a history of sickle cell disease. Recently, he noted swelling in his right arm and had a slight fever and chills. He went to the emergency room, where a Doppler sonogram of the venous system of the right arm showed a right axillary and right subclavian venous thrombosis. Blood cultures from two separate sites of the right arm grew identical gram-positive cocci in clusters that fermented mannitol. The MOST likely etiological agent is

1. Staphylococcus aureus
2. Streptococcus pyogenes
3. Streptococcus pneumoniae
4. Neisseria meningitidis
5. Staphylococcus epidermidis

ANSWER: A

Laboratory assistant isolated from spinal fluid samples Neisseria meningitidis (oval cocci arranged in pairs with adjacent sides concave in the smear). Which morphological group do these microorganisms belong to?

1. micrococci;
2. streptococci;
3. staphylococci;
4. tetracocci;
5. diplococci

ANSWER: E

A 19-year-old male presents with dribble and painful urination (strangury), purulent discharge from urethra and subfebrile temperature. Two days ago he had sexual intercourse with his girlfriend without condom. Venereologist took discharge for microscopy. Which microscopic picture from following confirms diagnosis “gonorrhea”?

1. Gram-negative rods and leucocytes in the smear
2. Gram-positive cocci located within leucocytes and outside
3. Gram-negative bean-shaped diplococci located free and within leucocytes
4. Spiral gram-negative bacteria
5. Gram-negative ovoid small rod located into epithelial cells

ANSWER: B

Which nutrient medium is the most convenient to isolate pure culture Neisseria meningitidis from the clinical sample?

1. Meat-peptone agar
2. McConcy agar
3. Hiss media
4. Meat-peptone broth
5. Serum agar

ANSWER: E

Laboratory assistant isolated from nasopharyngeal mucus spherical bacteria arranged in chains in the smear. What group do these microorganisms belong to?

1. micrococci;
2. streptococci;
3. staphylococci;
4. tetracocci;
5. diplococci

ANSWER: B

Which medium should be used to isolate and distinguish streptococci with hemolytic properties?

1. Meat-peptone gelatin
2. Blood agar
3. Hiss media
4. Meat-peptone broth
5. Serum agar

ANSWER: B

Over 50 children at an elementary school became violently ill several hours after eating lunch. All of the affected children ate sweet rolls. They developed severe nausea and vomiting, and some additionally developed abdominal cramps and non-bloody diarrhea. All of the students felt much better by the following morning. Gram’s stain of a smear taken from the presumed source of the food poisoning shows abundant gram-positive cocci in grape-like clusters. Which of the following is the most likely causative agent?

1. Bacillus cereus
2. Escherichia coli
3. Staphylococcus aureus
4. Streptococcus pneumoniae
5. Streptococcus pyogenes

ANSWER: C

Which virulent factor of pathogenic cocci from following capable of splitting connective tissue of a host?

1. Plasmocoagulase
2. Hyaluronidase
3. IgA protease
4. Fibrinolysine
5. Hemolysine

ANSWER: A

A 32-year-old female presents with high fever (390C), shortness of breath and cough productive of pink sputum. She reports that she was well the previous night but awoke with a shaking chill which lasted 20 minutes. A gram stain of this patient’s sputum has demonstrated lancet-shaped gram-positive diplococci, surrounded by capsule. The most likely causative agent is

1. Staphylococcus aureus
2. Streptococcus pyogenes
3. Streptococcus pneumoniae
4. Klebsiella pneumoniae
5. Yersinia pestis

ANSWER: C

The first stage of any infection is adhesion of the pathogen to host cells. All from following are adhesion factors оf streptococci EXCEPT:

1. Peptidoglycan
2. Pili
3. Flagella
4. Protein M
5. Capsule

ANSWER: C

Some bacteria can cause generalized infection due to ability to split host tissue and spread from the site of entry. Choose from the list invasion factors of pathogenic cocci:

1. Endotoxins
2. Hyaluronidase
3. Adhesins
4. Exotoxins
5. Antiphagocytic factors

ANSWER: B

A 4-year-old girl has staphylococcal scalded skin syndrome. Her disease is caused by the microorganism's ability to produce

1. alpha toxin
2. lipase
3. exfoliatin
4. hyaluronidase
5. coagulase

ANSWER: C

Pili of *Neisseria gonorrhoeae* are known to

1. be responsible for the absence of secre­tory IgA in urethral exudates
2. impart resistance to intracellular killing on piliated strains
3. have endotoxic properties
4. be organelles of attachment
5. be composed of lipopolysaccharides

ANSWER: D

Which of the following viruses belongs to subfamily Gammaherpesvirinae?

1. Varicella-zoster virus.
2. Epstein-Barr virus.
3. Human Cytomegalovirus.
4. Herpes simplex virus type 1
5. Herpes simplex virus type 2

ANSWER: B

Which of the following diseases is mosquito-borne?

1. West Nile encephalitis
2. Yellow fever.
3. Dengue.
4. Japanese encephalitis.
5. All of the above.

ANSWER: E

Specific prophylaxis and treatment of tick-borne encephalitis:

1. immunoglobulin;
2. formolated vaccine;
3. toxoid;
4. specific hyperimmune serum;
5. live vaccine.

ANSWER: B

What is the shape of rabies virus?

1. Spherical.
2. Polygonal.
3. Bullet-shaped.
4. Tubular.
5. Stick-like

ANSWER: C

Match rabies with a vaccine to prevent it.

1. Live, attenuated virus vaccine
2. Killed (inactivated), whole virus vaccine
3. Subunit vaccine
4. Vectored vaccine
5. No vaccine available

ANSWER: A

Rabies can be acquired as a result of:

1. inhalation of aerosolized virus
2. a bite of a rabid animal
3. inoculation through mucous membranes
4. transplantation of infected tissue
5. all of the above

ANSWER: E

Which of the following clinical specimens can be used for the demonstration of rabies antigen by direct immunofluorescence antemortem?

1. salivary smears.
2. corneal smears.
3. blood
4. hairs
5. a and b correct

ANSWER: E

Which of the following vaccines are prepared from live microbes?

1. Cholera and dysentery vaccines.
2. Measles and Solk polio vaccines.
3. Influenza and diphtheria vaccines.
4. All of the above.
5. BCG and oral polio vaccines

ANSWER: E

Which of the following vaccine is attenuated?

1. Dysentery vaccines.
2. Cholera vaccines
3. Diphtheria vaccines.
4. Solk polio vaccines.
5. BCG

ANSWER: E

Mycoplasma differ from bacteria:

1. by structure of the nucleoid
2. by toxin production
3. by tinctorial properties
4. by structure of cytoplasmatic membrane
5. by absence of cell wall

ANSWER: E

Choose among the listed reservoirs for human infections

1. food
2. water
3. sick animals, snsects
4. fly
5. sick humans, cariers

ANSWER: E

Which of the following assays is currently being used for the detection of HIV?

1. Agglutination
2. Complement fixation
3. Immunodiffusion
4. Flow cytometry
5. Enzyme-linked immunosorbent assay

ANSWER: E

Endospore formation is a property of:

1. Escherichia coli
2. Staphylococcus aureus
3. Treponema pallidum
4. Mycobacterium tuberculosis
5. Clostridium botulinum

ANSWER: E

Gas gangrene bacilli is

1. Facultative anaerobe
2. Facultative aerobe
3. Obligate aerobe
4. Microaerophylic bacteria
5. Obligate anaerobe

ANSWER: E

Clostridium tetani is

1. Gram negative bacilli
2. Gram positive cocci
3. Gram negative cocci
4. Spiral-shaped bacteria
5. Gram positive bacilli

ANSWER: E

Penicillin is the drug of choice for

1. Whooping cough
2. Typhoid
3. Brucellosis
4. Cholera
5. Scarlet fever

ANSWER: E

Which one of the following is NOT an important characteristic of Streptococcus pyogenes?

1. M protein
2. Beta-hemolysin
3. Polysaccharide group-specific substance
4. Exotoxin
5. Protein A

ANSWER: E

Three organisms, Streptococcus pneumoniae, Neisseria meningitidis, and Haemophilus influenzae.cause the vast majority of cases of bacterial meningitis. What is the MOST important pathogenic component they share?

1. Protein A
2. Endotoxin
3. p-Lactamase
4. Exotoxin
5. Capsule

ANSWER: E

Each of the following statements concerning Chlamydia trachomatis is correct EXCEPT:

1. It is an important cause of nongonococcal urethritis
2. It is the cause of lymphogranuloma venereum
3. It is an important cause of conjunctivitis
4. The infection is more readily diagnosed by serologic tests than by isolation of the organ­ism
5. It is an important cause of subacute bacterial endocarditis

ANSWER: E

Which one of the following types of organisms is NOT an obligate intracellular parasite and therefore can replicate on bacteriologic media?

1. *Chlamydia*
2. Adenovirus
3. *Rickettsia*
4. *Coxiella burnetii*
5. *Mycoplasma*

ANSWER: E

Tissue-degrading enzymes play an important role in the pathogenesis of several bacteria. Which one of the following is NOT involved in tissue or cell damage?

1. Lecithinase of *Clostridium perfringens*
2. Hyaluronidase of *Streptococcus pyogenes*
3. Leukocidinof *Staphylococcus aureus*
4. Beta-hemolysin of *Streptococcus pyogenes*
5. M protein of Streptococcus pneumoniae

ANSWER: E

The soil is the natural habitat for certain microorganisms of medical importance. Which one of the following is LEAST likely to reside there?

1. *Mycobacterium intracellular*
2. *Streptococcus pyogenes*
3. *Chlamydia trachomatis*
4. *Staphylococcus aureus*
5. *Clostridium tetani*

ANSWER: E

Of the organisms listed below, which one is the MOST frequent bacterial cause of pharyngitis?

1. Staphylococcus aureus
2. Streptococcus pneumoniae
3. Mycobacterium intracellular
4. Neisseria meningitidis
5. Streptococcus pyogenes

ANSWER: E

Each of the following statements concerning exotoxins is correct EXCEPT:

1. Some strains of Escherichia coli produce an enterotoxin that causes diarrhea
2. Cholera toxin acts by stimulating adenylate cyclase
3. Diphtheria is caused by an exotoxin that in­hibits protein synthesis by inactivating an elongation factor
4. Staphylococcus aureus produces an enterotoxin that causes vomiting and diarrhea
5. Botulism is caused by a toxin that hydrolyzes lecithin (lecithinase), thereby destroying nerve cells

ANSWER: E

Each of the following statements concerning Corynebacterium diphtheriae is correct EXCEPT:

1. C. diphtheriae is a gram-positive rod that does not form spores
2. Toxin production is dependent on the organ­ism's being lysogenized by a bacteriophage
3. Antitoxin should be used to treat patients with diphtheria
4. Diphtheria is caused by an exotoxin that in­hibits protein synthesis by inactivating an elongation factor
5. Diphtheria toxoid should not be given to children under the age of 3 years because the incidence of complications is too high

ANSWER: E

Each of the following statements concerning certain gram-negative rods is correct EXCEPT:

1. Pseudomonas aeruginosa causes wound infec­tions that are characterized by blue-green pus as a result of pyocyanin production
2. Staphylococcus aureus produces an enterotoxin that causes vomiting and diarrhea
3. Invasive disease caused by Haemophilus in­fluenzae is most often due to strains possess­ing a type b polysaccharide capsule
4. Legionella pneumophila infection is acquired by inhalation of aerosols from environmental water sources
5. Whooping cough, which is caused by Bordetella pertussis, is on the rise because changing antigenicity has made the vaccine relatively ineffective

ANSWER: E

Each of the following statements concerning enterotoxins is correct EXCEPT:

1. Enterotoxins typically cause bloody diarrhea with leukocytes in the stool
2. Staphylococcus aureus produces an enterotoxin that causes vomiting and diarrhea
3. Vibrio cholerae causes cholera by producing an enterotoxin that activates adenylate cyclase
4. Escherichia coli enterotoxin mediates ADP-ribosylation of a G protein
5. Invasive disease caused by Haemophilus in­fluenzae is most often due to strains possess­ing a type b polysaccharide capsule

ANSWER: E

Each of the following statements concerning plague is correct EXCEPT:

1. Plague is caused by a gram-negative rod
2. Plague is caused by a rod that can be cultured on blood agar
3. Plague is transmitted to humans by flea bite
4. The main reservoirs in nature are small rodents
5. Plague is of concern in many underdeveloped countries but has not occurred in the United States since 1968

ANSWER: E

Which one of the following statements concern­ing the organisms that cause brucellosis is CORRECT?

1. Brucellae are transmitted primarily by tick bite
2. Brucellae produces an enterotoxin
3. The principal reservoirs of brucellae are small rodents
4. Brucellae are obligate intracellular parasites that are usually identified by growth in hu­man cell culture
5. Brucellae are found in reticuloendothelial cells and often cause granulomatous lesions

ANSWER: E

Each of the following statements concerning epidemic typhus is correct EXCEPT:

1. The disease is characterized by a rash
2. The Weil-Felix test can aid in diagnosis of the disease
3. The disease is caused by a rickettsia
4. The disease is caused by a obligate intracellular parasites
5. The causative organism is transmitted from rodents to humans by a tick

ANSWER: E

Which one of the following organisms causes diarrhea by producing an enterotoxin that activates adenylate cyclase?

1. *Bacteroides fragilis*
2. *Staphylococcus aureus*
3. *Enterococcus faecalis*
4. *Clostridium difficile*
5. *Escherichia coli*

ANSWER: E

Each of the following statements concerning Clostridium perfringens is correct EXCEPT:

1. It causes gas gangrene
2. It causes food poisoning
3. It is a gram-positive, spore-forming rod
4. It produces an exotoxin that degrades lecithin and causes necrosis and hemolysis
5. It is a gram-negative rod that does not ferment lactose

ANSWER: E

Each of the following statements concerning Clostridium tetani is correct EXCEPT:

1. It is a gram-positive, spore-forming rod
2. Pathogenesis is due to the production of an exotoxin that blocks inhibitory neurotrans­mitters
3. Its natural habitat is primarily the soil
4. It is a anaerobic organism
5. It is a facultative organism; it will grow on a blood agar plate in the presence of room air

ANSWER: E

Each of the following statements concerning spirochetes is correct EXCEPT:

1. Species of Treponema are part of the normal flora of the mouth
2. Species of Borrelia cause a tick-borne disease called relapsing fever
3. Species of Treponema cause syphilis and yaws
4. The species of Leptospira that cause leptospirosis
5. The species of Leptospira grow primarily in humans and are usually transmitted by human-to-human contact

ANSWER: E

Each of the following statements concerning gonorrhea is correct EXCEPT:

1. Infection in men is more frequently symptom­atic than in women
2. A presumptive diagnosis can be made by finding gram-negative kidney-bean-shaped diplococci within neutrophils in a urethral discharge
3. Gonococcal conjunctivitis of the newborn rarely occurs in the United States, because silver nitrate or erythromycin is commonly used as prophyl axis
4. Neisseria gonorrhoeae It is a gram-negative kidney-bean-shaped diplococci
5. The definitive diagnosis can be made by testing at least a 4-fold rise in antibody to Neisseria gonorrhoeae

ANSWER: E

What was the most likely pathogen?

1. *Staphylococcus aureus*
2. *Staphylococcus epidermidis*
3. *Streptococcus pyogenes*
4. *Streptococcus pneumoniae*
5. *Streptococcus mitis*

ANSWER: A

A stool sample is plated on standard MacConkey-agar plates. After overnight incubation some of the colonies are dark pink in color, others are pale, nearly colorless. What can you conclude about the bacteria that produced dark- pink colonies?

1. Gram-positive.
2. Ferment lactose.
3. Not likely to be 'normal flora'.
4. Non-motile.
5. Produce capsules.

ANSWER: B

A common serotype of enterohemorrhagic E. coli is O157:H7. To which bacterial structure does the "H7" correspond?

1. Flagella.
2. Pili.
3. Capsule.
4. LPS core polysaccharide.
5. Porins.

ANSWER: A

A vacationing couple both develop severe watery diarrhea which lasts three days. Which organism is the most common etiologic agent of such infections?

1. *Shigella sonnei.*
2. *Pseudomonas aeruginosa.*
3. *Salmonella typhi.*
4. *Campylobacter jejuni.*
5. *Escherichia coli.*

ANSWER: E

A young child develops bloody diarrhea, produced by *Shigella* infection. From which source was this infection most likely to have been contracted?

1. Rare hamburger.
2. Dog or cat.
3. Cow, horse, or sheep.
4. Another child.
5. Spores present in soil.

ANSWER: D

A patient has chronic gastritis. Which of the following organisms is most likely?

1. *Campylobacter fetus.*
2. *Campylobacter jejuni.*
3. *Helicobacter pylori.*
4. *Escherichia coli.*
5. A non-cholera *Vibrio*.

ANSWER: C

A child has Pertussis. How was this infection most likely to have been acquired?

1. Release of oral flora into the bloodstream by dental work.
2. Bite of a dog or cat.
3. Contact with livestock, or animal products such as leather or wool.
4. Consumption of dairy products made from unpasteurized milk
5. Inhalation of respiratory droplets from another person.

ANSWER: E

Which of the bacteria below is most likely to be the Gram-negative rods seen in the stained smear?

1. *Pseudomonas aeruginosa.*
2. *Proteus mirabilis.*
3. *Klebsiella pneumoniae.*
4. *Prevotella melaninogenica.*
5. *Bacteroides fragilis.*

ANSWER: E

A patient is diagnosed with *Clostridium difficile* colitis. Which item would represent a known risk factor for such infections?

1. Been treated with antibiotics.
2. Consumed unpurified water.
3. Visited the southwestern United States.
4. Eaten undercooked fried rice.
5. Been in contact with livestock

ANSWER: A

Which observation would suggest *Helicobacter pylori* as the cause of illness?

1. Curved or spiral bacteria are seen in the biopsy after silver staining.
2. Biopsy shows infiltration of gastric epithelium by lymphocytes.
3. pH of stomach fluid is equal to 1 (normal), rather than decreased.
4. Ingested isotope-labeled nitrate is converted to nitrite in the stomach.
5. Bacteria are found in stomach fluid, but not in contact with the gastric epithelium

ANSWER: A

An elderly man develops pneumonia and septicemia. Gram stain of sputum contains many neutrophils and Gram-positive cocci, in pairs. Blood and sputum cultures grow out a Gram-positive coccus, α-hemolytic on sheep blood agar, and catalase-negative. Which organism below is most likely?

1. Staphylococcus epidermidis.
2. Staphylococcus aureus.
3. Streptococcus pneumoniae.
4. Streptococcus pyogenes.
5. Streptococcus agalactiae.

ANSWER: C

A 23-year-old medical student had headache and fever one evening. By the next morning she had become very ill, with high fever, severe headache, and stiff neck. She was admitted to the hospital. Later that day she developed rash, at first petechial and then pupuric. Gram stain of CSF showed many white cells and Gram-negative cocci, many in pairs. Which organism is most likely to be the cause of her infection?

1. Escherichia coli.
2. Haemophilus influenzae.
3. Neisseria meningitidis.
4. Streptococcus agalactiae.
5. Streptococcus pneumoniae.

ANSWER: C

Syphilis is caused by which of the following?

1. Helicobacter pylori
2. Proteus mirabilis
3. Treponema pallidum
4. Serratia marcesans
5. Treponema Vincentii

ANSWER: C

What disease does Neisseria meningitidis cause?

1. Rheumatic fever
2. Scarlet fever
3. Cholera
4. Epidemic cerebrospinal meningitidis
5. Nodamura disease

ANSWER: D

What disease do Streptococci cause?

1. Epidemic cerebrospinal meningitidis
2. Scarlet fever
3. Enteric fever
4. Diphtheria
5. Flue

ANSWER: B

What disease do Streptococci cause?

1. Typhoid fever
2. Mumps
3. Epidemic cerebrospinal meningitidis
4. Rheumatic fever
5. Tuberculosis

ANSWER: D

Interferon action is:

1. primarily antiviral
2. to disrupt cytoplasmic membranes
3. to protect primary infected cells
4. found in high levels in phagocytic granules
5. kill cells infected by viruses

ANSWER: A