1- The preferred vein puncture site is the

a- Cephalic vein

B- Median cubital vein

C- Median basilic vein

d- Median cephalic vein

Correct answer is B

Rational : The median cubital vein is the larger and more stable vein and is preferred for venipuncture.The cephalic and basilic veins have a greater tendency to roll and venipuncture may be more painful from these sites.

This question measure the following:

Competency domain: Professiona l laboratory skills

subdomain:Phlebotomy and specimen collection

Indicator: Know the preferred vein puncture site.

2-A urine culture revealed rough irregular colonies with pink precipitate, Gram-negative coccobacilli, lactose fermenter, positive for indole and gas production, motile, negative for urea and citrate. The most appropriate identification is:

A-Escherichia coli

B-Klebsiella pneumoniae

C-Citrobacter sp

D-Enterobacter sp.

Correct answer is A

Rational : E. coli is Gram negative, rod-shaped, motile. It is cultured onto MacConkey agar and ferment lactose as determined by the presence of pink colonies production gas. negtive for urea and citrate

This question measure the following :

 Competency domain :Microbiology / competency subdomain/Bacterial Identification

Indicator: Isolate and identify gram-negative Enterobacteriaceae and differentiate genera and species.

3-Which color bag should you use when disposing of clinical waste?

a-Red

b-Yellow

c-Green

d-black

The correct answer is: B

Rational : Clinical waste falls into the infectious waste category which is segregated into yellow plastic bags or sealed containers. This waste type requires incineration for complete disposal. The bag or container will usually be labelled “INFECTIOUS”

This question measure the following :

 Competency domain : Safety of practice and risk management / competency subdomain:Infection control

Indicator : Ability to minimizes possible dangers from biological specimens, laboratory supplies and equipment

4-Specimens requested for fungi investigations are routinely cultured on

a-Sabourud dextrose agar

b-Blood agar

c-Chocolate agar

d-CLED agar

The correct answer is :A

Rational : For isolation, fungal media with antibiotics should be used to suppress bacterial contamination. Sabouraud's dextrose agar is commonly used media.

This question measure the following :

Competency domain : Microbiology / competency subdomain: Mycology& Viruses

Indicator : Prepare clinical specimens for mycological studies (KOH and fungal cultures)

5-The most important step in tissue processing:

a-Fixation

b- Clearing

c- Dehydration

d- Embedding

The correct answer is :A

Rational : fixation is the preservation of biological tissues from decay due to autolysis or putrefaction. It terminates any ongoing biochemical reactions and may also increase the treated tissues' mechanical strength or stability

This question measure the following :

Competency domain : Histology& micro techniques / competency subdomain: Pre- Analytical

Indicator: Identify Sample types and containers

6-Which of the following investigations should be done immediately to best confirm a non matched blood transfusion reaction?

a-Indirect combo’s test

b-Direct combo’s test

c-Antibodies in patient’s serum

d-Antibody in donor serum

The correct answer is :B

Rational : The direct Coombs test detects antibodies that are stuck to the surface of the red blood cells. Since these antibodies sometimes destroy red blood cells, a person can be anemic and this test can help clarify the condition.

This question measure the following :

Competency domain : Immunohematology and Transfusion Services / competency subdomain: Compatibility Testing Principles and Procedures

 Indicator : • Correctly select red cells that are antigen negative for patients with antibodies

7- Neutrophil count is high in

a- Acute bacterial infection

b- Iron deficiency anemia

c-Megaloblastic Anemia

d-Viral infection

The correct answer is :A
Rational : Under infectious or inflammatory conditions, neutrophil granulopoiesis can be increased, typically termed “emergency granulopoiesis”, in order to restore homeostasis in the bone marrow after recruitment of neutrophils to peripheral sites

Neutrophils remove bacteria through a process known as phagocytosis.

This question measure the following :

Competency domain : Hematology / competency subdomain: Leukocyte Procedures

 Indicator : Demonstrate knowledge of WBC differentials

8-The TFT’s profile that is more likely to be present in hyperthyroidism is

a-High FT4, high FT3, low TSH

b-Low FT4, high FT3, low TSH

c-High FT4, low FT3, low TSH

d-High FT4,Normal FT3,Low TSH

The correct answer is :A

Rational : The concentration of thyroid hormones (T3 and T4) in the blood regulates the pituitary release of TSH; when T3 and T4 concentrations are low, the production of TSH is increased, and, conversely, when T3 and T4 concentrations are high, TSH production is decreased.

This question measure the following :

Competency domain : Clinical chemistry / competency subdomain: Endocrinology

 Indicator : Demonstrate knowledge of thyroid function tests (thyroxin, TBG, free T3, free T4, TSH)

9- Which of the following specific gravities would be most likely to correlate with a pale yellow urine?

1. 1.005
2. 1.010
3. 1.020
4. 1.030

The correct answer is :A

Rational : In pale yellow urine, the concentration of chemicals is low. Therefore, “1.005” is most likely correlated specific gravity with pale yellow urine.

This question measure the following :

Competency domain : Urine Analysis & Body Fluid / competency subdomain: Urine analysis Procedures

Indicator : Perform physical examination of urine (color, clarity, specific gravity)

10-What is the most appropriate fasting procedure when a lipid study of triglyceride, total cholesterol, HDL cholesterol, and LDL cholesterol tests are ordered?

1. 8 hours; nothing but water allowed
2. 10 hours; water, smoking, coffee, tea (no sugar or cream) allowed
3. 12 hours; nothing but water allowed
4. 16 hours; water, smoking, coffee, tea (no sugar or cream) allowed

The correct answer is :C

Rational : If the test is drawn as part of a total lipid profile, it requires a 12-hour fast (no food or drink, except water).

This question measure the following :

Competency domain : Clinical chemistry / competency subdomain: Lipids

Indicator : Demonstrate knowledge of lipid analyses and correlate hyperlipidemia with coronary artery disease; know desirable limits for total cholesterol, LDL, and HDL

1-The reference range for CSF protein is:

1. 6 to 8 g/dL
2. **15 to 45 g/dL**
3. 6 to 8 mg/dL
4. 15 to 45 mg/dL

Correct answer is B

Rational:The normal range for a protein level is 15 to 45 milligrams per deciliter (mg/dL). Milligrams per deciliter is a measurement that looks at the concentration of something in an amount of fluid

This question measure the following:

Competency domain:Clinical chemistry / Competency subdomain: Protein analysis

* Indicator: Demonstrate knowledge of clinical protein analysis and correlate test results with disease states

2- Metabolic acidosis can be detected by testing urine for the presence of:

1. Proteins
2. Glucose
3. Uric acid
4. **Ketone bodies**

Correct answer is: D

Rational: There are several types of **metabolic acidosis**: Diabetic **acidosis** (also called diabetic ketoacidosis and DKA) develops when substances called **ketone** bodies (which are acidic) build up during uncontrolled diabetes.

This question measure the following:

Competency domain: **Urine Analysis & Body Fluid** / Competency subdomain: Urinalysis Procedures

Indicator: Perform chemical examination of urine: Chemical tests (pH, glucose, nitrate, urobilinogen, protein, ketones, bilirubin, blood, leukocyte esterase) Confirmatory tests (Clinitest®, Ictotest®, Acetest®, sulfosalicylic acid (SSA)

3-If you`re working in lab where hazardous liquid chemicals are present, which are`nt considered appropriate personal protective equipment for the situation?

1. Safety goggles
2. **Open -toed shoes**
3. Long-sleeved lab caot
4. Gloves

 Correct answer is: B

Rational: PPE includes eye protection, gloves, maximum skin coverage and closed toe shoes. In some cases protection such as aprons, respirators, splash shields, ear plugs and specialized gloves may be recommended or required.

This question measure the following:

Competency domain: Safety of practice and risk management / Competency subdomain: Infection control

Indicator: Ability to use personal protective equipment, e.g. gloves, gowns, mask, face shields, aprons

4-Allergic reactions are frequently associated with an increase in the presence of:

1. Lymphocytes
2. Neutrophils
3. Monocytes
4. **Eosinophils**

Correct answer is:D

Rational: Eosinophils are thought to mediate inflammatory and cytotoxic events associated with allergic disorders, including bronchial asthma, rhinitis and urticarial

This question measure the following:

Competency domain: **Hematology** / Competency subdomain: **Leukocyte Procedures**

Indicator: Understand leukocyte disorders and correlation with WBC differential

5-Which condition gives rise to the highest serum level of transaminases?

1. **Acute hepatitis**
2. Alcoholic cirrhosis
3. Obstructive biliary disease
4. Diffuse intrahepatic cholestasis

Correct answer is: A

Rational: very high elevations of the transaminases suggests severe liver damage, such as viral hepatitis, liver injury from lack of blood flow, or injury from drugs or toxins. Most disease processes cause ALT to rise higher than AST; AST **levels** double or triple that of ALT are consistent with alcoholic liver disease.

This question measure the following:

Competency domain: **Clinical chemistry** / Competency subdomain: Hepatic function tests

Indicator: Describe and differentiate tests that are elevated in liver disease, obstructive jaundice, and hemolytic jaundice

6-A patient with a normal blood glucose and a positive urine glucose should be further checked for:

1. Diabetes mellitus
2. **Renal disease**
3. Gestational diabetes
4. Pancreatitis

Correct answer is: B

Rational: Renal glycosuria, also known as renal glucosuria, is a rare condition in which the simple sugar glucose is eliminated (excreted) in the urine despite normal or low blood glucose levels.

This question measure the following:

Competency domain: **Clinical chemistry** / Competency subdomain: Renal function test

Indicator: Demonstrate knowledge of renal function tests and correlate results with pathological conditions affecting kidney function; know reference limits

7-The normal yellow color of urine is produced by:

1. Bilirubin
2. Hemoglobin
3. Urobilinogen
4. **Urochrome**

Correct answer is: D

Rational: Normal urine color ranges from pale yellow to deep amber — the result of a pigment called urochrome .Pigments and other compounds in certain foods and medications can change the urine color

This question measure the following:

Competency domain: Urine Analysis & Body Fluid / Competency subdomain: General Knowledge

Indicator: Describe physical and chemical properties of urine

**8-You have recieved a vaginal swab that was not kept in transport media and was dry**

**a) You have to accept the sample for culture**

**b) You have to reject the sample**

**c) You have to accept the sample with a note declares that is an old sample**

**Correct answer is:B**

**Rational: Transport media are special media formulated to preserve a specimen and minimize bacterial overgrowth from the time of collection to the time it is received at the laboratory to be processed.**

**This question measure the following:**

**Competency domain:** **Microbiology / Competency subdomain:** **Media Quality Control, Techniques, and Cultures**

**Indicator: Demonstrate knowledge of criteria for proper collection and rejection of specimens for the clinical microbiological laboratory**

**Demonstrate knowledge of criteria for proper collection and rejection of specimens for**

**the clinical microbiological laboratory**

**9-** **Gram positive cocci in clusters with positive test for coagulase**

a) S. pyogenes

**b) S. aureus**

c) S. epidermidis

d) S. pneumoniae

**Correct answer is: B**

**Rational:** **Staphylococcus aureus is a gram-positive, catalase-positive, coagulase-positive cocci in clusters.**

**This question measure the following:**

**Competency domain: Microbiology / Competency subdomain: Bacterial Identification**

**Indicator: Isolate, identify, and differentiate gram-positive cocci**

**10-The heat generated by the pressure is the principle of**

a) Oven

**b) Autoclave**

c)Pasturization

d)STERILIZATION

**Correct answer is: B**

**Rational: An autoclave is a machine that uses steam under pressure to kill harmful bacteria, viruses, fungi, and spores on items that are placed inside a pressure vessel.** **The items are heated to an appropriate sterilization temperature for a given amount of time. The moisture in the steam efficiently transfers heat to the items to destroy the protein structure of the bacteria and spores.**

**This question measure the following:**

**Competency domain: Safety of practice and risk management / Competency subdomain:** **Infection control**

**Indicator: Identify methods of disinfection and sterilization**

 The End

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