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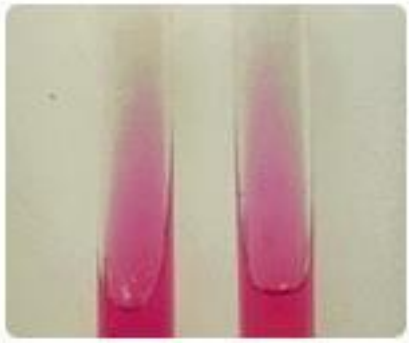
Exam : **ASCP-MLT**

Title : MEDICAL LABORATORY TECHNICIAN - MLT(ASCP)

Vendor : ASCP

Version : DEMO

NO.1 Conversion of only the slant to a pink color in a Christensen's urea agar slant is produced by bacterial species that have weak urease activity. The reaction in the slant to the right is often produced by Klebsiella species, as an example. Strong urease activity is indicated by conversion of the slant and the butt of the tube to a pink color, as seen in the tube to the left. The slant only reaction in the right tube may be seen early on if only the slant had been inoculated; however, with a strong urease producer, both the slant and the butt would turn.
Therefore, the reaction is dependent on the strength of urease activity. If the media had outdated for a prolonged period, either there would be no reaction or the appearance of only a faint pink tinge, either in the slant, the butt or both, again depending on the strength of urease production by the unknown organism.
The urease reaction seen in the Christensen's urea agar slant on the far right indicates:



A. Use of outdated medium
B. Slant only inoculated
C. Strong activity
D. Weak activity
Answer: D

NO.2 Iron deficiency anemia, or IDA, is associated with an increased TIBC as there is less iron to bind to transferrin. Microcytic, hypochromic red cell morphology, a decreased serum iron level, a decreased serum ferritin level, and a decreased hemoglobin level are all characteristics associated with IDA.
All of the following are characteristic findings in patients with iron deficiency anemia EXCEPT:
A. decreased serum iron level
B. decreased hemoglobin
C. microcytic, hypochromic red cell morphology
D. decreased ferritin
E. decreased total iron-binding capacity (TIBC)
Answer: E

NO.3 Autologous units must be drawn before they are needed, and must be readily available, therefore are generally not of use in emergencies.
All of the following are benefits of autologous donation except:
A. Reduces demand for homologous blood
B. Reduces exposure to infectious agents

C. Eliminates sensitization to cellular blood components
D. Are always on hand in case of an unexpected emergency
Answer: D

NO.4 Although cysteine-blood agar was traditionally used, F. tularensis will also grow on commercially available Thayer-Martin and chocolate agar which have been enriched with supplemental nutrients.
Which of the following media would you use to isolate Francisella tularensis:
A. Cysteine-blood agar
B. Lowenstein-Jensen media
C. Bordet-Gengou media
D. Sheep-blood agar
Answer: A

NO.5 Monoclonal antibodies are usually produced by:
A. Hybridomas
B. Cultured T cells
C. Human plasma cells
D. Cytotoxic T cells
Answer: A

NO.6 S. aureus does not have capsular material as a defense mechanism. H. influenzae, K. pneumoniae, N.
meningitidis, and S. pneumoniae each have capsular material use as a defense mechanism. This capsular material is an antiphagocytic substance which helps deter bacterial death by macrophages and other white blood cells.
Microbiology
Which one of the following does NOT have capsular material as a defense mechanism?
A. S. aureus
B. H. influenzae
C. N. meningitidis
D. K. pneumoniae
E. S. pneumoniae
Answer: E

NO.7 Convert the following temperature from Celsius to Fahrenheit
8 degrees C
A. 46.4 degrees F
B. 14 degrees F
C. 77 degrees F
D. 68 degrees F
Answer: A

NO.8 Blood plasma will contain coagulation proteins, but not in a clotted tube where serum is

present.
Blood serum contains each of the following substances except:
A. Water
B. Electrolytes
C. Coagulation proteins
D. Sugars
Answer: C

NO.9 The two main areas of the clinical laboratory are:
A. anatomical and clinical.
B. cytology and histology.
C. urinalysis and microbiology.
D. chemistry and hematology.
Answer: A

NO.10 True Statements:
Urine should be well mixed prior to dipping the reagent strip. Prolonged immersion may wash out test reagents.
False Statements:
Urine should be centrifuged prior to dipping the reagent strip. When visually reading the reagent strip, all results can be read immediately after dipping the strip in the urine specimen.
Which of the following statements are TRUE regarding the reagent strip test procedure? (Choose ALL of the correct answers)
A. Urine should be centrifuged prior to dipping the reagent strip.
B. Urine should be well mixed prior to dipping the reagent strip.
C. Prolonged immersion may wash out test reagents.
D. When visually reading the reagent strip, all results can be read immediately after dipping the strip in the urine specimen.
Answer: B,C

NO.11 FFP that has been thawed at 30 - 37oC and maintained at 1 - 6oC must be transfused within 2 4 hours. In contrast, "Thawed Plasma" can be used for up to 5 days as a replacement therapy for patients requiring stable clotting factors. Keep in mind that these are two different component types and you are asked about FFP.
Blood Bank
FFP that has been thawed at 30 - 37oC and maintained at 1 - 6oC must be transfused withi n _____ after it has been thawed.
A. 10 days
B. 12 hours
C. 8 hours
D. 5 days
E. 24 hours
Answer: E

NO.12 The activities conducted in a laboratory with a certificate of waiver include:
A. moderate- or high-complexity lab testing until the lab is determined by survey to be in compliance
B. tests that are simple to perform and have an insignificant risk for error
C. high complexity tests only
D. physicians to perform microscopy only
Answer: B

NO.13 Know what you are handling - read label carefully.
What is the first thing you do before you handle or open a chemical:
A. Ask a supervisor for assistance
B. Consult procedure manual for information
C. Obtain a copy of the SDS
D. Read the label
Answer: D

NO.14 Primary- Target glands (such as thymus, thyroid, parathyroid, etc.)
Secondary- Pituitary gland
Tertiary- Hypothalamus
Match the type of endocrine dysfunction with the appropriate organ:
1. Target gland
2. Pituitary gland
3. Hypothalamus
A. Secondary
B. Primary
C. Tertiary
Answer: A,B,C

NO.15 Listeria monocytogenes is the correct answer. The motility agar is showing motility at the top of the tube, but not deeper; typical of this catalase-positive, gram positive bacillus. Streptococcus agalactiae would be catalase negative and a coccus. Erysipelothrix rhusiopathiae would be H2S-positive and catalase negative. Escherichia coli is a gram negative bacillus.

This Gram-positive bacillus grew as a diffusely beta-hemolytic colony from a newborn. It was catalase positive and had tumbling motility on a hanging drop preparation. This is how it appeared on triple sugar iron agar and motility medium. What is the most likely diagnosis?

A. Streptococcus agalactiae
B. Erysipelothrix rhusiopathiae
C. Listeria monocytogenes
D. Escherichia coli
Answer: C

NO.16 Rule-out is a process by which antibodies are identified as being unlikely in a given sample because of the absence of an expected antigen-antibody reaction. In other words, the absence of a reaction is noted with a cell that is positive for the corresponding antigen.
Although rule-out procedures may vary somewhat from institution to institution, the following general principles apply:
Non-reactive cells are selected for rule-out. To be classified as non-reactive, a cell must NOT have reacted at any phase of testing in a given panel or screen.
Using the logic that if the rule-out cell is positive for a given antigen, it should have reacted with the corresponding antibody, you can rule-out antibodies that correspond to antigen positive cells.
To increase the probability that rule-out will not mistakenly eliminate a weakly-reacting antibody that exhibits dosage*, use only cells that are homozygous for the corresponding antigen for those systems that generally show dosage. Generally these include: C, c, E, e, Fya, Fyb, Jka, Jkb, M, N, S, and s.
In this case, it is only possible to rule out on screening cell 2 since it demonstrates a negative reaction with the patient serum. Anti-C cannot be ruled out since the C antigen is heterozygous on screening cell 2 with c.
Anti-Fya cannot be ruled out since this antigen is not present on screening cell 2. Anti-M and anti-Jka can be ruled out since the antigens are homozyous while demonstrating a negative reaction on screening cell 2.
Rule-out, while very useful, can lead to error. Ruling out an antibody should be combined with other supporting data to increase confidence in the solution; the more data collected, the higher the probability that the final solution is correct.
*Dosage means that there are two "doses" of the same antigen present on the red cells . Antibodies that exhibit dosage react more strongly with homozygous cells (e.g., Jka Jka) than with heterozygous cells (e.g., Jka Jkb) .
Based on the phenotype of the RBC screening cells, and patient results shown on the right, which of the following antibodies CANNOT be ruled out?
A. Anti-C
B. Anti-Fya
C. Anti-M
D. Anti-Jka
Answer: A,B

NO.17 This is the lens power of the scanning objective lens.
A. 40X
B. 10X
C. 100X
D. 4X
Answer: D

NO.18 In which of the following laboratory situations is a verbal report permissible?
A. When preoperative test results are needed by the anesthesiologist
B. When the report cannot be found at the nurse's station
C. When the patient is going directly the physician's office
D. None of these answers is correct.
Answer: D

NO.19 Insulin is the hormone that is mainly responsible for the entry of glucose into the cell for energy production Glucagon and epinephrine promote glycogenolysis, conversion of glycogen to glucose, which increases plasma glucose. Cortisol, along with glucagon, increases gluconeogenesis, formation of glucose from noncarbohydrates, which also raises plasma glucose concentration.
Chemistry
Which of the following hormones is mainly responsible for the entry of glucose into the cell for energy production?
A. Epinephrine
B. Cortisol
C. Insulin
D. Glucagon
Answer: B

NO.20 Hives and rash usually indicate an allergic reaction. Hematuria is due to a variety of causes. Fever and chills usually indicate a febrile reaction. Positive DAT due to conditions other than sensitization to red cell alloantigens is not uncommon. Therefore a positive DAT in the posttransfusion specimen with a negative DAT in the pretransfusion specimen is more likely to indicate alloimmunization.
The most definite indication that a patient has been sensitized to a specific red cell antigen is:
A. A positive posttransfusion DAT in a patient with a previously negative DAT
B. A positive posttransfusion DAT in a patient with a previously positive DAT
C. Hemoglobinuria
D. Hives and rash
Answer: A

NO.21 Ferritin and hemosiderin are considered storage forms of iron.
Which substance(s) is/are considered iron storage compounds?
A. ferritin
B. myoglobin
C. hemosiderin
D. hemoglobin
Answer: A,C

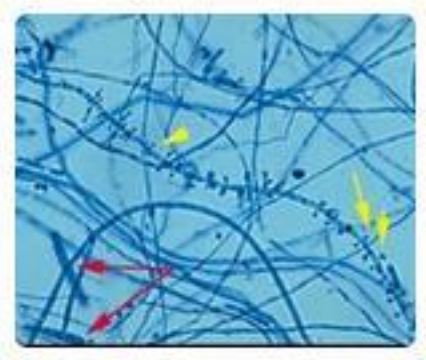
NO.22 Sterile yellow stopper tubes contain thixotropic gel and a clot activator.
Question options:
A. False
B. True

Answer: A

NO.23 Serum calcitonin is normally produced by the C cells of the thyroid. It functions to reduce serum calcium by inhibiting release of calcium from bone. It is a peptide with a molecular weight of 3400, and has a half life of approximately 12 minutes. It is characteristically elevated in medullary carcinoma of the thyroid. Since medullary carcinoma often occurs as an autosomal disorder, family members of patients with this condition should be screened for serum calcitonin.
Serum calcitonin is typically elevated in which of the following conditions:
A. Medullary carcinoma of the thyroid
B. Glioblastoma
C. Adrenal adenoma
D. Hyperthyroidism
Answer: A

NO.24 Serological diagnosis of active or recent infection generally requires the demonstration of IgM antibody, or the demonstration of a fourfold rise in the titer of specific IgG antibody.
Which of the following would be considered most significant as it relates to serological testing:
A. Rise of antibody titers is diagnostic
B. Cross reactivity is not significant
C. Concentration of antibody is diagnostic
D. Presence of an antibody titer is generally diagnostic
Answer: A

NO.25 The correct answer is Trichophyton rubrum. The tiny microconidia are lined up in a "birds on the fence" arrangement along the hyphal strand transversing the field of view (yellow arrows). Two pencil-shaped, smooth walled macroconidia are also seen in the lower left field of view (red arrows). Trichophyton verrucosum may produce microconidia in small quantities. However, they are irregularly arranged with little tendency to line up along the hyphae. Antler hyphae and string bean macroconidia are characteristic of this species.
One of the key characteristics in the identification of Epidermophyton floccosum is the inability of this dermatophyte to produce microconidia. Two to four-celled, club-shaped macroconidia are produced, usually in clusters of two or three.



The profusion of tiny microconidia lining up along the hyphae in this photomicrograph is characteristic of which of the following organisms?

A. Trichophyton verrucosum
B. Trichophyton rubrum
C. Epidermophyton floccosum
Answer: B

NO.26 RAST tests, or Radioallergosorbent tests, are used to screen for an allergy to a specific substance or substances if a person presents with allergy-like symptoms.
The assay which is most helpful in identifying specific allergens is:
A. C-reactive proteins
B. Complement fixation
C. RAST
D. RIA
Answer: C

NO.27 If a drug is given at intervals that are the same as its half-life, it will take about 5 half-lives to reach steady state.
If a drug is given at intervals that are the same as its half-life, approximately how long will it take the drug to reach steady state?
A. It will take about two half-lives to reach steady state.
B. It will never reach a steady state.
C. It will take about 5 half-lives to reach steady state.
D. It will be at steady state from the first dose.
Answer: C

NO.28 What component is indicated for patients who receive directed donations from immediate family members to prevent transfusion-associated graft versus host disease (TA-GVHD)?
A. HLA matched products
B. IgA-deficient products
C. Washed Red Blood Cells
D. Irradiated Red Blood Cells
Answer: A

NO.29 Laboratories performing which of the following types of tests need to be enrolled in a CLIA-approved proficiency testing program?
A. Waived
B. Highly complex
C. both moderately and highly complex
D. Moderately complex
Answer: C

NO.30 Provide the equivalent measurement for one pint.
A. 0.474 liters
B. 0.25 liters

C. 4.2 liters
D. 0.1 liter
Answer: A