

MED TECH NOTES

Question	Answer
Why is morphology of red cells important	Aids physicians in diagnosis and relates to the quality of the indices results.
A slide that is too thin	cobblestone effect and has no central palor
a slide that is too thick looks like:	stacks of cells many overlapping
a normal slide is:	cells randomly spaced in singles or occasional doubles
The round and oval red cells with diameters of greater than 9 microns and decreased central pallor are	macrocytes or megalocytes
RBCs that vary significantly in size are called	Anisocytes
cells that have MCV of < 80 , & normal central pallor are called	Microcytes
Cells with MCV > 100 , round to oval, decreased central pallor are	Macrocytes or megalocytes
RBCs with $>$ Normal MCV and central pallor, larger than normal.	Pseudomacrocytes
Pseudomacrocytes are larger than normal due to what?	Flattening on the slide
What color are Mature erythrocytes?	Buff white in Wrights stain
Immature red blood cells appear what color in Wright's stain	Blue gray
Immature Red blood cells are called	Shift cells
In a supravital stain immature cells are called	Reticulocytes
Pale cells with a large center of Pallor are called	Hypochromic
Polychromic	Cells with no center of color are called
Hypochromic cells have less	Hemaglobin
Polychromatic cells are larger and younger than	Mature erythrocytes

What is the alert level for polychromatic cells	More than 2 in an oil immersion field.
RBC's that are normochromic have a MCHC value range of	32 - 36 MCHC
RBCs that are Hypochromic cell have a MCHC value of	< 30%
What MCHC value is the maximum	36
Which of the forms are frequently artifactual?	*echinocytes, stomatocytes
Burr cells or Echinocytes look like	Thorns
Acantocytes look like	irregular spiked cells
Codocytes look like	Targets
Stomatocytes look like	Collapsed ball. Center of pallor is elongated
Eliptocytes look like	Canoe or Kayak long with pallor
Cells showing a variations in morphology in an abnormal response to a stimulus are...	Pathological
Cells show variation in morphology but no physiological impairment results.	Non-Pathological
Cells show variation in morphology as a normal body response to invasion by a bacteria or virus.	Reactive
Neutrophils with more than 6 lobes are defined as	HYPERsegmented
Why do hypersegs form?	DNA production defect slows production down & the nucleus forms many lobes.
True or False Hypersegmented Neutrophilic cell size remains the same with hypersegmentation.	False. They can become larger than 15 microns
The cytoplasm of Hypersegmented neutrophils is less funtional. True or False	False. They cytoplasm is normal in appearance and is still phagocytic.
Barr bodies are significant only when?	In diseases of chromosomal abnormailities.

Disease conditions of hypersegmented neutrophils include	Megaloblastic anemias (Folic acid deficiency, or pernicious anemia), cancer therapy, chronic infections.
Ungraded Practice Question Which of the following statements are true for storing and handling reagent strips? (Choose ALL of the correct answers) Store reagent strips at room temperature. Touching the reagent areas of the strip will not interfere with	
OSHA	Occupational Safety & Health Association
DHS-LFS	Department of Health Services Laboratory Field Services
HIPAA	Health Insurance Portability & Accountability Act
BOM	Board of Medicine
CLIA	Clinical Laboratory Improvement Act
PBR	Patients Bill of Rights
NCCLS	National Committee for Clinical Laboratory Standards
JCAHO	Joint Commission for the Accreditation of Health care Organizations
Na	Sodium
K	Potassium
Cl	Chloride
Pb	Lead
HG	Mercury
NH4	Ammonia
OPIM	Other Potentially Infectious Materials
PPE	Personal Protective Equipment
BSI	Body Substance Isolation
UP	Universal Precautions
BT	Bleeding Time
PT	Prothrombin Time
PTT	Partial Thromboplastin Time
FDP	Fibrin Degradation Products
FSP	Fibrin Split Products

HIV	Human Immunodeficiency Virus
HBV	Hepatitis B Virus (A/C)
TB	Tuberculosis
SST	Serum Separator Tube
EDTA	Ethylene-diamine-tetra-acetic acid
CBC	Complete Blood Count
Hct	Hematocrit
Hgb	Hemoglobin
MCV	Mean Corpuscular Volume
MSDS	Material Safety Data Sheets
ACD	Acid Citrate Dextrose
ETOH	Ethanol (drinking alcohol)
NPO	Nothing by mouth
prn	as needed
bid	twice a day
pp	post prandial
qid	four times a day
qh	every hour
NA	NotApplicable
PO	by mouth
Rx	prescription or treatment
Dorsal	back
Lateral	sides away from midline
supine	laying down
Anterior	Front
Posterior	back
Medial	The mid-dline of the body
cephalic	head
basilic	bottom
HBV	Hepatitis B Virus
HIV	Human Immunodeficiency Virus
TB	Tuberculosis

AIDS	Auto Immune Deficiency Syndrome
Who wrote the Patients Bill of Rights (PBR)?	President Clinton
When did the PBR go into effect?	1997
What act prevents violation of confidentiality?	HIPAA
Who regulates workplace safety	OSHA
Who is responsible for training and associated costs?	Employer
Civil Law Compensation is ?	Money
Criminal Law is between the State & whom?	A Person
Administrative Law is between a person & whom?	Employer
If guilty of a Criminal law you may have to ?	go to jail and or pay fines
What are the 4 elements of Neglect?	Establish Duty, Breach of Duty, Injury, Proximate cause due to Breach of Duty
Malpractice is charged on whom?	A licensed professional
Neglect is charged on whom?	Unlicensed Professional
Turning the care of a patient over to a less qualified person is termed?	Abandonment
Creating apprehension or performing unauthorized handling and treatment of a patient is termed?	Assault
The physical contact with a person without his or her consent and without legal justification is termed?	Battery
LIGHT BLUE TOP HAS what additive?	Sodium Citrate
SST tube has what chemical additive?	No Additive but with a gel serum separator
Red top Tube has what chemical additive?	No Additive

Green Top Tube has what chemical additive?	Heparin
Lavender top tube has what chemical additive?	EDTA
Grey top Tube has what chemical additives?	K Oxylate & Na Flouride
Canary Yellow top tube ACD has what added?	Acid Citrate Dextrose
Canary Yellow top SPS tube has what added?	Nutrients for bacteria
What tests need sample to be protected from light?	bilirubin, B vitamins
When do you not use a tourniquet?	Lactic Acid test
What test sample is kept warm?	Cold Agglutins
In which tube are coagulation studies collected?	Light Blue top
In which tube is a CBC collected?	Lavender top
In which tube are therapeutic drugs drawn?	Red Top
In which tube are chemistries drawn?	SST Tiger top
In which tube are glucose tests drawn	Gray If by themselves
In which tube are serology tests drawn?	SST
Which tube is selected for Ammonia tests?	Green Top
Which tube is used for a legal alcohol test?	gray top
Lactic acid test goes into what tube?	gray
A paternity test goes into which tube?	Canary yellow ACD
A blood culture to be transported is collected in what tube?	Canary yellow SPS
What tests need to be iced?	Ammonia immediately, Lactic Acid

How many light blue tubes are collected if drawn alone.	2. Discard 1st tube & it need not be full.
How long is appropriate for a tourniquet to be tied on a patient?	60 seconds.
True or False You can purchase and launder your own lab coat?	FALSE
A stop watch (or second hand) is needed for which test?	Bleeding Time
A device to perform a heel or finger stick is known as?	Lancet
Gauze is used to do what for a venepuncture?	Stop bleeding apply pressure
Can you draw blood from a newborn with a syringe?	YES
Needle sticks to phlebotomists are usually by what device?	winged infusion or butterfly
What gauge needle is the smallest to use for a venepuncture?	23, smaller needles will hemolyse blood cells
EDTA binds what in the blood?	Calcium
What should you do if you observe a rash develop around the area where you apply the tourniquet?	Remove and get a tourniquet of a different material. The patient may have a latex allergy.
Which test sample requires that you do not use a tourniquet?	Lactic acid
True or False It is acceptable to place sample tubes in your lab coat pocket?	True and may be helpful for samples that are light sensitive.
What test sample requires that it be chilled	Ammonia
What test samples are sheltered from light?	Bilirubin,
Which tube has to be filled completely?	Light blue
Where are needles, slides, & lancets deposited?	Sharps container
How many times can a sharps container be used?	Once. Once the lid is closed it will not open again.
Where are soiled materials placed?	Biohazard bags

Where are equipment packaging materials placed once opened?	regular trash
What PPE is required for TB isolation rooms?	Mask, gloves, gowns, caps, booties
A lancet greater than ___ mm is not appropriate for infant heel sticks	2.5 mm
A tourniquet should not be left on the arm longer than?	1 minute
Bilirubin tests are collect in what tube?	Amber red top to protect from light
How are ammonia samples handled?	Ice then separate plasma from the cells within 20 minutes of collection and place in separate plastic tube and freeze. Store and transport frozen.
Separate plasma from cells within 15 minutes and place in separate plastic tube. If blood is drawn on chilled tubes and left on ice, specimen is good for up to 2 hours before centrifugation. Store and transport on ice or refrigerated.	Lactic acid samples
Gray top has Sodium fluoride and Potassium oxylate. What does the Na fluoride do?	Antiglycolytic agent
What is SPS	Sodium polyanethol sulfonate for micro
Sed rates are ESR collected in what color tube top?	Lavendar or Black
What are the three preferred veins of the arm for phlebotomy?	Cephalic, median cubital, basalic
What artery is to be avoided for venepuncture?	Brachial
The Integumentary system is	Skin, hair, nails
The outermost layer of the skin is?	Epidermis
The layer that contains the touch receptor	Dermis
The fat layer is called?	Subcutaneous Tissue
What is the function of the outermost layer?	Epidermis is dead cells that protect the body.

What dermal layer regulates body heat?	The subcutaneous fat layer.
Which layer holds the capillaries?	Dermis
The cardiovascular system comprises?	The heart, vessels, the blood.
What color is plasma?	light yellow
91% of plasma is what?	water
Less than 9% of plasma is mostly made up of what?	Proteins
The function of Albumin is to	provide cells nutrients
The function of fibrinogen is to	stop bleeding
The main function of globulins are to provide	immunity
What are the formed elements of blood?	RBCs, WBCs, & Plateletts
The main function of the RBC is to	Cary O ₂ and CO ₂
The white blood cells provide for what	immunity
Platelets are in the blood system to do what?	stop bleeding
What is a Thrombocyt?	A platelete
Which cells move through the body on their own?	WBCs
What is a leukocyte?	WBC
What action does a leukocyte use eliminate an infection?	Phagocytosis
The heart has how many chambers?	4
The top chambers are called	Atria
The bottom chambers are called	Ventricles
The left chambers of the heart pump blood to where	Body
The right chambers of the heart pump blood to the	Lungs
The veins carry blood to where	To the right atria of the heart

The arteries are responsible for pumping blood to where	Away from the heart
What vessel carries blood to the lungs?	Pulmonary Artery
Which vessel carries blood from the lungs to the heart?	Pulmonary Veins
The three kinds of blood vessels	Veins, Arteries, capillaries
Capillaries are made up of only one kind of vessel tissue called?	Tunica intima
The blood vessel outer layer is called what	Tunica adventia
The middle layer of the blood vessel is called the	Tunica media.
What are veniols and arteriols?	The small veins and arteries that branch into capillaries.
What percentage of blood is plasma and formed elements?	45% plasma, 55% formed elements
What should you do if a vein collapses when drawing a standard vacutainer tube?	Change to a smaller tube like a pediatric size.
What three diseases are phlebotomists most concerned about catching?	TB, HIV, Hepatitis
What communicable disease affects the lung tissue?	TB
Which form(s) of hepatitis is contracted by the oral fecal route?	A
A vaccine is available for which form of hepatitis	B
Which hepatitis is almost always fatal?	C
Which hepatitis is contracted by the blood and body fluids path?	B & C
Which of the 3 communicable diseases affects the liver?	Hepatitis
What kind of organisms are responsible for hepatitis?	Viruses
What kind of organisms are responsible for TB?	bacteria

What virus is associated with AIDS?	HIV
How is the tuberculosis bacteria spread?	It is airborne.
What carriers are responsible for AIDS to spread?	Blood, semen. Infected needles, unprotected sex.
What is the necessary carrier for HIVs to spread? In	Cells (epithelial cells, blood, sperm)
What is the carrier for TB?	Spittle or water droplets in air
What are the carriers for Hepatitis?	Infected feces, Blood or body fluids.
What is the term for yellowing of the skin and eyes?	Jaundice
HBVAG means	Hepatitis B Virus AntiGen
How many chains are in the Chain of Transmission?	7
List the chains of transmission.	Pathogen, carrier, exit, reservoir, entrance, susceptible host, disease process.
Name 3 types of pathogens?	Virus, bacteria, fungi
What are materials are considered to be a carrier?	infected material, blood & body fluids, insects, animals,
What is an infection contracted in the hospital called?	Nosocomial
What act is the single most effective element to break the chain of transmission?	Hand washing
In the hospital, what kinds of hand washing techniques are used?	Surgical, Medical
How much time is needed for routine hand washing with soap?	half minute 30 seconds
In the hospital, what kinds of hand washing techniques are used?	Surgical, Medical
Nosocomial means what?	hospital acquired infection
What organism causes meningitis	Neisseria meningitides
What is peculiar about the organism that causes meningitis?	It seeks its own way into the cerebro spinal fluid.
What is the single most important safeguard with patients?	Hand Washing

What are the two settings of phlebotomy employment?	Stationary Lab, Mobile Lab.
How does a phlebotomist prevent cross contamination?	Practice Universal Precautions
If a patient does not want their blood drawn the phlebotomist must do what ?	respect their rights
Who orders lab tests?	MD, PA, or NP
Who cancels Lab Tests?	MD
What information must be on the patients test samples?	Date/Time, Initials of collection, Patient's name, & unique identifier
True or False It is acceptable to draw blood from a mastectomy patient's arm on the same side as the mastectomy?	FALSE
True or False If a patient has an active IV it is acceptable to draw blood above the IV.	False
True or False Cleaning the venepuncture site should be done in a circular movement away from the center.	True
If a patient is allergic to shellfish what are you to be sure not to use?	Betadine as a cleanser
What is an alternative material for gloves when a patient has laytex allergy?	Nitrile or PVC
What are common medications for thinning the blood?	Aspirin, Coumadin, Warfarin, Heparin, TPA, Streptokinase
What should you ask on an order for Therapeutic Drug levels?	Time and amount of last dose.
What sick patients are susceptible to blood clots?	Diabetes, Stroke patients
What is the term for a swollen, red and hot bruise.	Thrombophebitis
Which patient diseases are important for infection control?	Diabetes, Cancer, Transplants,

What is a fasting test?	When a patient does not eat or drink for 8 to 12 hours before the test.
If a patient feels faint what should you do?	Stop the blood draw and have patient lie down.
Ask the patient what to confirm their identity?	Name and Date of birthdate
With a child patient who has the right to refuse blood work?	Parent or guardian. Not the child
Chemicals that prevent blood from clotting are called what?	Anticoagulants
Platelet peripheral zone is responsible for	Adhesion
Platelet Solu-Gel zone is responsible for	Contraction
Platelet organelle zone is responsible for	Secretion
Bernard Soulier syndrome	Platelet disorder with giant platelets causes a deficiency of Glycoprotein 1b a receptor for Von W Factor
Count for platelets in hemocytometer	
The term used to indicate that a wound has stopped bleeding is?	Hemostasis
Chemicals released from a vein by injury are called?	Vascular Factors
Chemicals released by platelets to induce narrowing of the blood vessel are known as?	Platelet Factor
Chemicals in the plasma that stops blood clotting are called?	Plasma Factor
All the individual blood factors will cause?	Vasoconstriction
Vascular Factor is also called?	Von Willebrand's Factor
The messenger for platelets to aggregate at an injury site is?	Vascular Factor

The test for Von Willebrand's factor is the	Bleeding Time
Bleeding time test determines a deficiency in which factor	Vascular or Von Willebrand's
What is the normal value for the Bleeding Time?	less than 7.5 minutes
What is the test that replaces the BT	PFA or PFT Platelet Function Assay/Test
What changes to platelets does Vascular Factor affect?	Platelets grow spiky & become sticky
A hemostatic plug is made up of what?	platelet aggregates
Normally platelets are not sticky & don't adhere to vessel walls. When sticky, where do they adhere (anatomical)	Tunica media and adventitia
The outer layer of a vein is the...	Tunica adventitia
The middle layer of a vein is the...	Tunica media
The inner layer of a vein is the...	Tunica intima
Which coagulation test is for platelet function?	PT Prothrombin
In what tube is the PT test drawn?	Light blue
What is a normal range for the PT?	10-12 seconds
What drugs are used to reduce clotting in patients with a disorder of platelets?	Coumadin or Warfarin
Does the PT test for Intrinsic or Extrinsic factors	Extrinsic
What is the INR	International Normalized Results
What is the normal INR result?	between 0.9 and 1.1 INR
The formula for INR is...	Patient Results divided by the International normal.
When drawing blood from a patient on anticoagulants what is of concern?	bruising or hematoma
What is the test for Plasma Factors?	PTT Partial Thromboplastin time

PTT test is used to monitor patients on which anticoagulant?	Heparin
What is the normal value for a PTT?	28-34 seconds
7.5 minutes or less is normal value for which test?	BT
10 - 20 seconds is a normal range for which test?	PT
28 - 24 seconds is a normal range for which test?	PTT
PT screens for abnormal blood coagulation triggered by exposure of plasma to what?	Negatively charged surface
Platelets are receptive to what protein?	Fibrinogen
Aggregated platelets will combine with what to secure the hemostatic plug?	Fibrin strands
The final steps in forming a clot is to activate a mechanism to contract?	Platelet actomyosin
Von Willebrand's factor is found in which 2 places?	Plasma and vessel wall
A patient's arm band has a different medical number than on your order but the name and date of birth are the same. Do you continue with the draw?	No
Two questions to ask a patient to confirm that they are the correct patient are what?	What is your name and Date of birth
The urinary system is responsible to	filter waste
The respiratory system is responsible for	oxygenating blood
Which is a smaller gauge 18 or 25?	25

lancets for infant heel sticks are smaller than	2.5 mm
Lavender top tubes have what chemical in them?	EDTA
Common hematology tests are (list 4)	CBC, hgb, hct, differential, sickle screen, Sed rate, platelet counts
The light blue tube has what chemical in it?	Citrate
The light blue tube is used for what tests?	coagulation studies PT, PTT,
Red top tubes are used for what?	Serum Chemistries
Red top chemistries are	glucose, cholesterol, triglycerides, potassium, BUN, DK liver
SST stands for	Serum separator tube
SST chemistries are	glucose, cholesterol, triglycerides, potassium
Green top tubes have what chemical in them	Heparin
Green top tubes are commonly used for which tests?	ammonia, HLA types, chromosome screens
Gray top tube has what chemicals in it?	sodium: oxylate and flourate
Gray top tubes are used for what tests?	glucose only, GTT, blood alcohol test, lactic acid
The yellow top tube has one of two chemicals. What are they?	ACD or SPS
ACD yellow top is used for what tests?	Cell studies like genetics
SPS yellow top is used for what tests?	blood cultures for transport
What is the usual antiseptic for venepunctures?	70% alcohol
What is the usual antiseptic for blood alcohol levels?	Betadine
What is the usual cleanser for blood cultures?	Chlorahexadine
If a person is allergic to shellfish (iodine) what antiseptic should be used?	Chlorahexadine

If a person is allergic or on a drug sensitive to alcohol what antiseptic should be used?	Betadine
What is the angle of penetration for venepuncture?	30 degrees
What is the angle of penetration for winged infusion sets?	15 degrees
What is the angle for preparing blood smear slides?	30 degrees
If a patient has an IV drip going into an arm, where do you draw blood?	Below the IV or other arm.
What condition of a patient would you not draw from affected arm?	Masectomy or removal of arm lymph nodes
For a finger stick blood draw why do you wipe away the first drop	interstitial fluid may dilute sample
If you squeeze a finger puncture to vigorously what can happen?	Interstitial fluid may dilute sample.
The function of the heart is to do what?	Pump blood
The function of arteries is to do what?	carry blood away from the heart
The function of veins is to do what?	Carry blood to the heart.
What is the function of the pulmonary vein?	Carry blood from the lungs to the heart.
What is the function of the pulmonary artery?	Carry blood from the heart to the lungs.
What are the smallest blood vessels called?	Capillaries
What are small veins called?	Venules
What are small arteries called?	Arterioles
The practice of Universal Precautions in drawing blood is to prevent disease spread to whom?	The phlebotomist.
EDTA binds what to prevent clotting?	Calcium

What organization is responsible for safety?	OSHA
Who is responsible for safety training in the hospital setting?	The employer
Heparin blocks what during a clot formation?	thrombin
In patient contact, when do you wash your hands?	Before and after
Citrate binds to what to prevent clotting?	Calcium
Glass tubes may break in a centrifuge, why is it important to wait for the machine to stop?	Prevent blood & glass aerosols.
How do you remove broken glass in a centrifuge?	with gloves and forceps
The purpose of a tourniquet is to help what?	locate a vein, restrict blood flow
If a vein collapses during a venapuncture, what should you do?	Reduce vacuum pressure with a smaller tube or syringe.
If a patient is awake and aware refused to have their blood drawn, what should you do?	Respect their wishes.
3 required attributes of a sharps container are?	Puncture, spill and tamper resistant.
Burn patients have their blood drawn where?	undamaged and unscarred skin
List 2 things to minimize aerosol contamination.	Keep rubber stoppers on the tube and wait for centrifuge to stop.
Bleach solutions are diluted to what ratio?	1:10
Spinning a red top sample before clotting has finished causes what?	Fibrin strands in the serum
What is the safe time limit for the use of a tourniquet?	1 minute
If a hematoma forms during venipuncture what must you do?	Discontinue and apply pressure.
In a gray top tube what is Sodium fluoride used for?	antiglycolosis

QA WHAT IS VALIDATION	Process of proving that a procedure, process, system, equipment, or method works as expected and achieves the intended result.
QA WHAT IS VERIFICATION	The confirmation by examination and provision of objective evidence that specific requirements have been fulfilled. (Daily point control test are done)
Waived testing	May be performed by anyone and outside of the lab. Are non-diagnostic i.e glucometer testing to follow a diabetic's blood sugar.
Non Waived Testing	Moderate and Highly complex testing. Moderate has 4 positions, High has 5 positions
ACCURACY	Closeness of the agreement between the result of a measurement and the true value of the measurand.
MEAN	average
MODE	most common value
MID-RANGE	number between the smallest and largest observation
T-TEST	Comparison of the means of 2 populations, 2 test method means. Compares the accuracy of 2 methods
PRECISION	The closeness of agreement between results. Also reproducibility
Concentration of protein in CSF to serum is	Less than 1 % CSF almost the same.
Concentration of protein in CSF to serum in neonates is	higher
Concentration of glucose in CSF and Serum is	
WHAT IS AN ANTIGEN?	RBC DEFINES THE BLOOD TYPE
A BLOOD TYPE HAS WHAT ANTIGEN	A
B BLOOD TYPE HAS WHICH ANTIGEN	B
AB BLOOD TYPE HAS WHICH ANTIGENS	A&B
O BLOOD TYPE HAS WHAT ANTIGENS	NONE
A BLOOD HAS WHICH ANTIBODIES	B

B BLOOD HAS WHICH ANTIBODIES	A
AB BLOOD HAS WHICH ANTIBODIES	NONE
O BLOOD HAS WHICH ANTIBODIES	A&B
WHICH BLOOD TYPE HAS THE MOST H SUBSTANCE	O
WHICH BLOOD TYPE HAS THE LEAST H SUBSTANCE	A1B
PLACE THE BLOOD TYPES IN ORDER	O > A2 > A2B > A1 > A1B
WHAT IS THE TRUE POSITIVE	SENSITIVITY
WHAT IS THE TRUE NEGATIVE	SPECIFICITY
WHAT IS THE FORMULA FOR SENSITIVITY	POS / PRESENCE OF DISEASE
WHAT IS THE FORMULA FOR SPECIFICITY	NEGATIVE / ABSENCE OF DISEASE
WHAT ARE IMMUNOGLOBULINS	GLYCOPROTEINS SECRETED BY PLASMA CELLS
WHAT KIND OF CHAINS DO IMMUNOGLOBULINS HAVE	2 EACH HEAVY & LIGHT
WHAT ARE THE 5 CLASSES OF IMMUNOGLOBULINS	G M A D E
WHAT ARE THE CHARACTERISTICS OF IgG	MONOMER, ONLY ONE TO X PLACENTA, 2NDRY OR LATE RESPONSE, ACTIVATES THE CLASSICAL COMPLEMENT PATHWAY, 75-80%
CHARACTERIZE IgM	PENTAMER, HEAVY CHAIN, PRIMARY RESPONSE, MOST EFFICIENT FOR CLASSICAL PATHWAY ACTIVATION, LARGEST BUT ONLY 10%
CHARACTERIZE IgA	MONOMERIN SERUM, 2 MONOMERS IN SECRETORY, ACTIVATES ALTERNATIVE COMPLEMENT PATHWAY, 15-20% RESISTS PROTOEOLYSIS
CHARACTERIZE IgD	MONOMER, DELTA HEAVY CHAIN, ENZYME DEGRADED, <1%

CHARACTERIZED IgE	MONOMER HEAVY CHAIN, RESPONSIBLE FOR ALLERGY .0004% BINDS TO MAST CELLS TO RELEASE HISTAMINE AND LEUKOTRIENS
WHICH 2 CLASSES OF IG HAVE SPECIAL CHAINS	M & A
WHICH IG IS NOT A MONOMER	M
WHICH IG IS MOST IMMUNOGENIC	IgG
WHICH BLOOD GROUPS ARE IgM	A & B
WHICH IG CROSSES THE PLACENTA	G
WHICH IG IS AN EARLY RESPONSE	M
WHICH IG IS A LATE RESPONSE	G
WHICH IG HAS A HALF LIFE OF 22 DAYS	G
WHICH IG IS EFFICIENT AT AGGLUTINATION	M
BENCE JONES PROTEINS PRECIPITATE AT WHAT TEMPERATURE	40-60C
FREE LIGHT CHAINS ARE ALSO CALLED	BENCE JONES PROTEINS
WHAT ARE THE 3 PMSs	EOSINOPHILS, BASOPHILS, OR GRANULOCYTES
EOSINOPHIL GRANULES(EOS)ARE ASSOCIATED WITH WHAT CONDITIONS	ALLERGIES & PARASITES ANTIMICROBIAL AGENTS
BASOPHIL GRANULES RELEASE WHAT CHEMICALS	HISTAMINES, HEPARIN SMOOTH MUSCLE CONTRACTION
GRANULOCYTES HAVE 2 GRANULES THAT PRODUCE	MYELOPEROXIDASE, LYSOZOME BACTERIOCIDAL AGENTS
MONOCYTES BECOME MACROPHAGES BY	LEAVING CIRCULATION INTO TISSUE

HUMORAL IMMUNITY IS CONSIDERED SPECIFIC OR NON-SPECIFIC	NON-SPECIFIC
HUMORAL IMMUNITY IS ABOUT WHAT	COMPLEMENT
WHAT ARE THE 2 WAYS TO INITIATE COMPLEMENT	CLASICAL & ALTERNATIVE
WHAT DOES COMPLEMENT DO?	LYSES CELLS
CLASSICAL PATHWAY REQUIRES WHICH IGs	G & M
HOW IS C3b ACTIVATED?	C3 CONVERTASE
WHAT IS C3 CONVERTASE FORMULA	C4b2a
WHAT IS C4b2a?	C3 CONVERTASE AN ENZYME TO INITIATE CLASICAL PATHWAY.
WHAT 3 THINGS CAN HAPPEN IF C3b IS ACTIVE	INACTIVATED, PHAGOCYTOSIS, CELL LYSIS
WHAT ARE THE CLASSICAL PATHWAY RECOGNITION UNIT AND ACTIVATION UNIT	CA & MG
WHAT ARE THE ALTERNATE PATHWAY RECOGNITION AND ACTIVATION UNITS	MG & C3bBb + FACTOR P = C3BbP.... C5~> C5a&b. ALWAYS IN PROGRESS.
WHAT ARE THE GRAM STAIN REAGENTS AND ORDER OF USE?	VIOLET/IODINE/ALCOHOL/ACETONE/SAFRANIN
Plate method to determine antimicrobial sensitivity is	KIRBY BAUER
Alpha hemolysis	green
Beta hemolysis	clear
Gamma hemolysis	none
Bulls eye colony	Yersinia enterocolitica
safety pin	Yersinia pestis
medusa head	B anthrax
String of pearls test	B anthrax
Gull wing shaped	Campylobacter

Cat scratch fever	<i>Bartonella henselae</i>
Cat bites	<i>Pasturella matocida</i>
Undulating fever	Brucellosis
Whooping cough kennel cough	<i>Bordetella</i>
pseudomembranous colitis	<i>C difficile</i>
Tennis racket shape	<i>C. tetani</i>
lollipop shape	<i>C tetani</i>
fried rice	<i>B cereus</i> food poisoning
tumbling motility at RT	<i>Listeria monocytogenes</i>
chinese letters	<i>C. diptheria</i>
Gram neg that only reacts to form H ₂ S	<i>Erysipelothrix rhusopathiae</i>
181 what is the major difference between a fluorescent microscope with epi- illumination and a fluorescent microscope with transmitted light?	Epi-illuminated microscope has a dichroic mirror.
182 Are autoimmune diseases associated with HLA antigens or are they B cell disorders	HLA B & D
183 IgA deficiencies are associated with	an increase in autoimmune diseases.